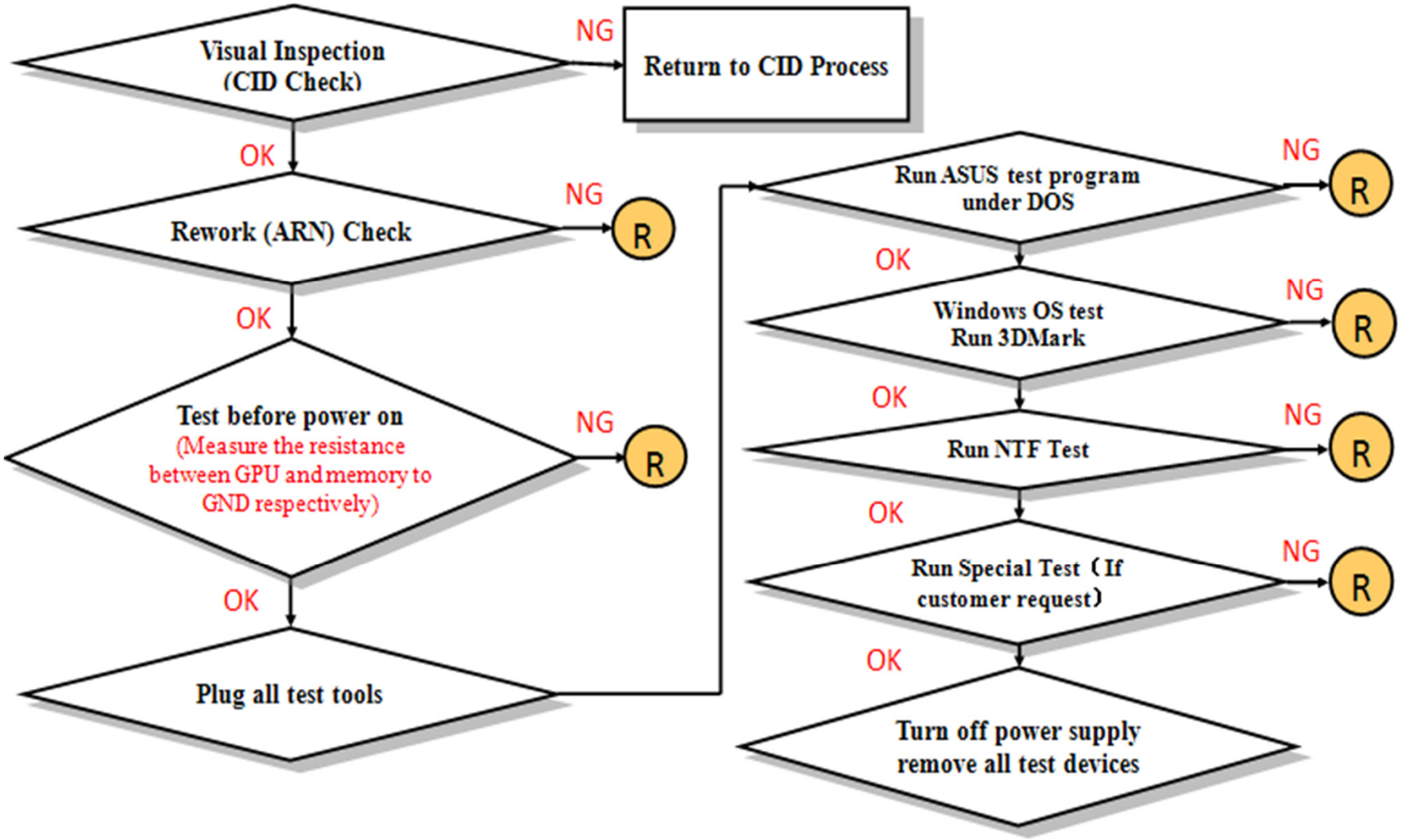
VGA L1 Training Materials

CCER 1
REV 1.2

Overview

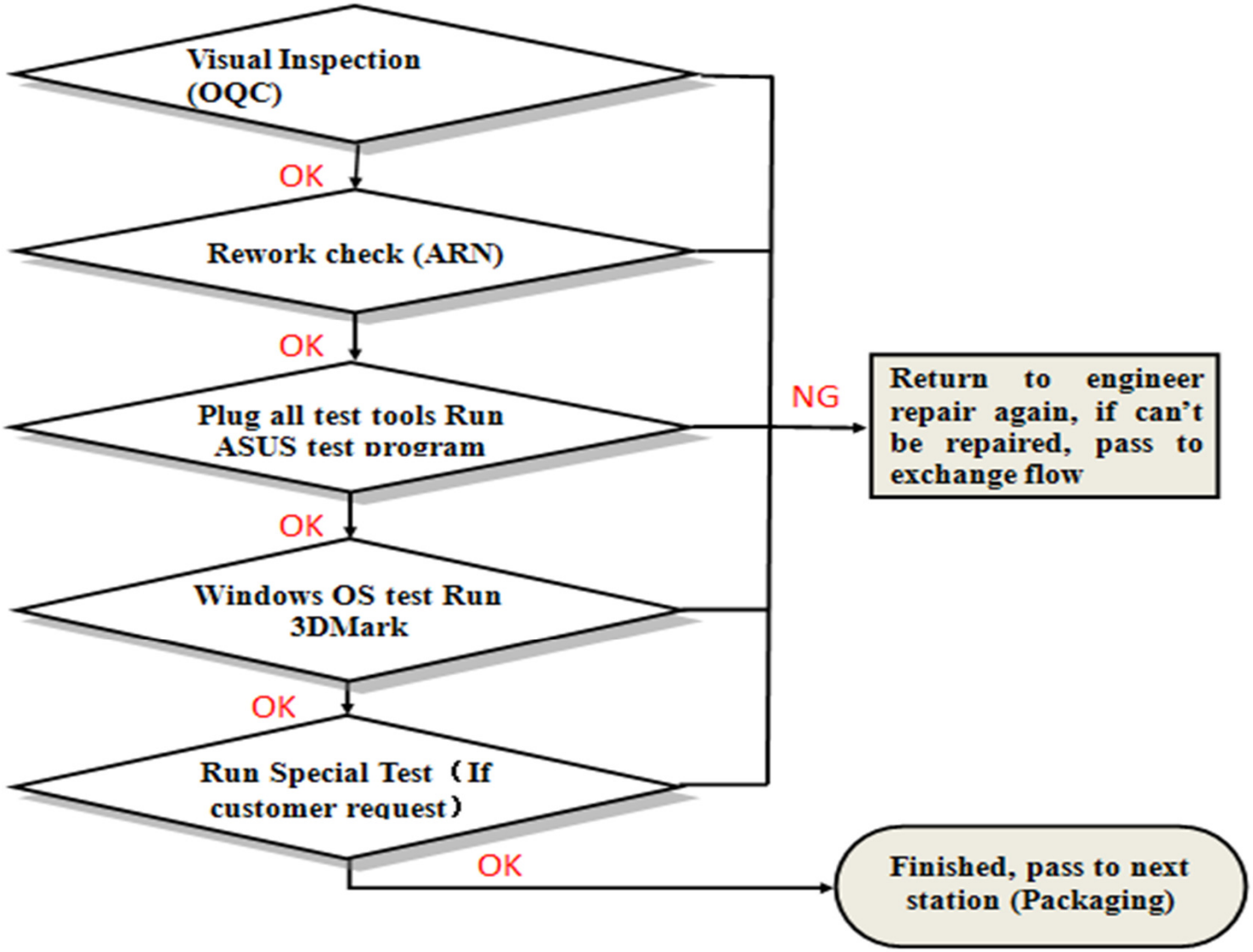
Chapter 1
Testing Flow Chart

A. Pretest Flow Chart



R means return to RMA or pass to repair engineer

B. Final Test Flow Chart



Chapter 2
Customer Induced Damage (CID) Criteria

CID Outline

1. PCB Trace Scratched
2. PCB Broken
3. Damaged Capacitors, Resistors, Inductors, Small Passive Components, Etc.
4. PCB & Component Oxidation
5. PCB Burned
6. Component Burned
7. Missing Component
8. Dirt
9. S/N Label Damaged
10. CID & O.O.W. service process flow chart

1-1 PCB Trace Scratched

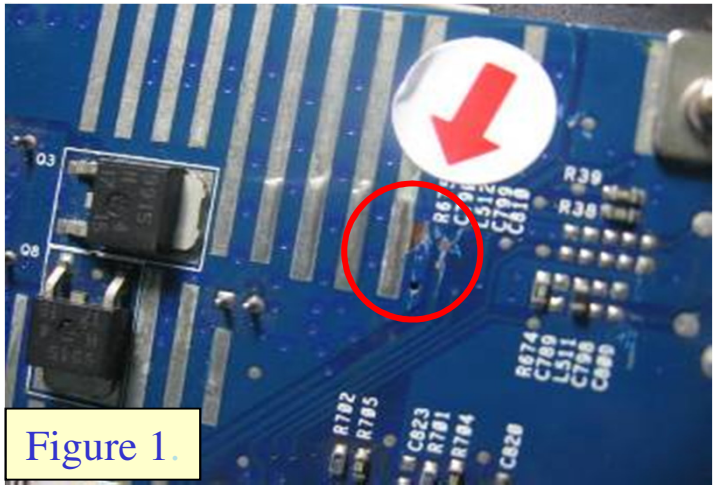


Figure 1.

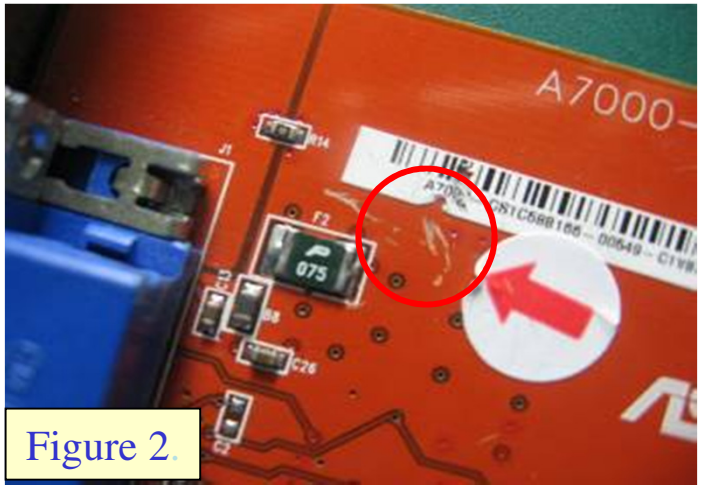


Figure 2.

Figure 3.

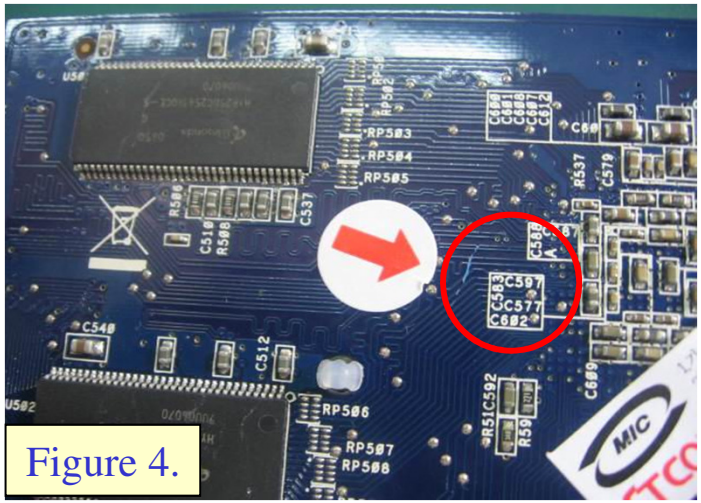


Figure 4.

1-2 PCB Trace Scratched

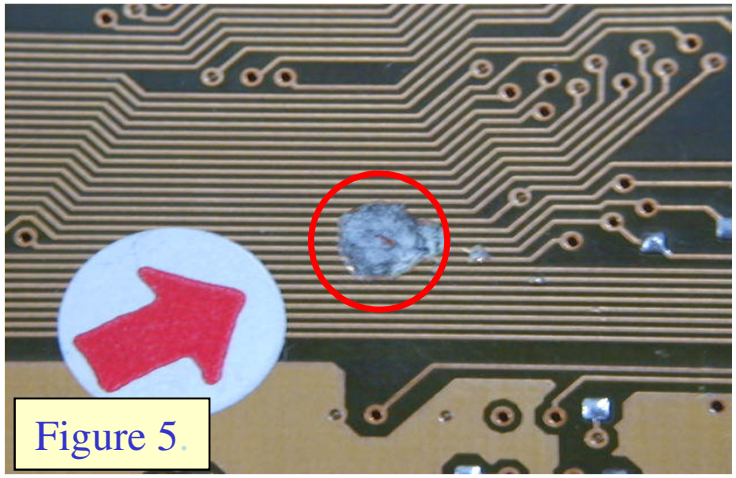


Figure 5.

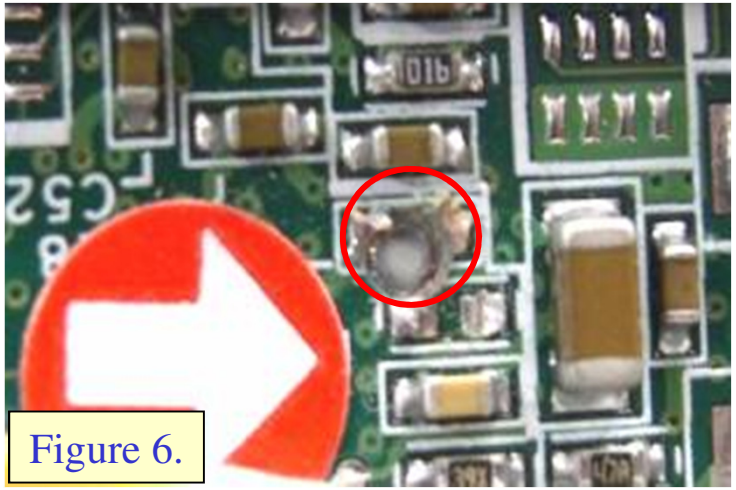


Figure 6.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Trace Scratched [Figure 1~6]	Less than 2 lines and PCB no broken inside	Accepted	-	Charge	Charge
	More than 3 lines or PCB broken inside	Rejected	-	-	-
	More than 3 lines or PCB broken inside (If customer request)	-	Accepted	Charge	Charge

1-3 PCB Trace Scratched

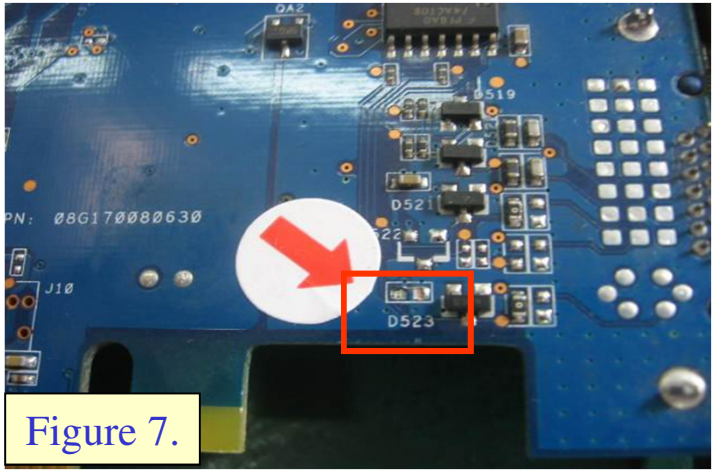


Figure 7.

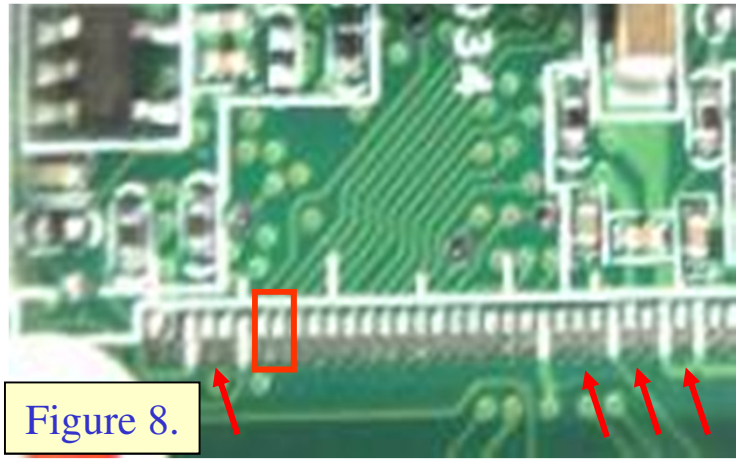


Figure 8.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Trace Scratched [Figure 7~8]	Less than 2 lines and PAD no broken	Accepted	-	Charge	Charge
	More than 3 lines or PAD broken	Rejected	-	-	-
	More than 3 lines or PAD broken (If customer request)	-	Accepted	Charge	Charge

2-1 PCB Broken

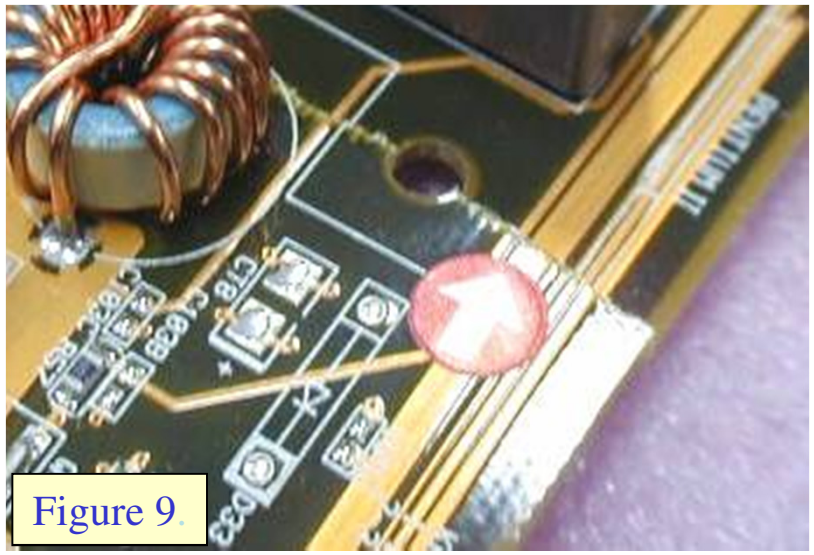


Figure 9.

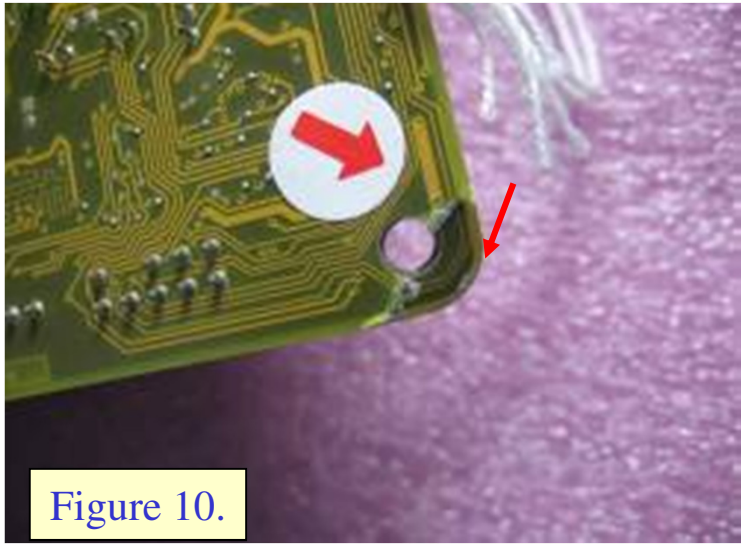


Figure 10.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Broken [Figure 9~10]	The broken part already destroy PCB	Rejected	-	-	-

2-2 PCB Broken

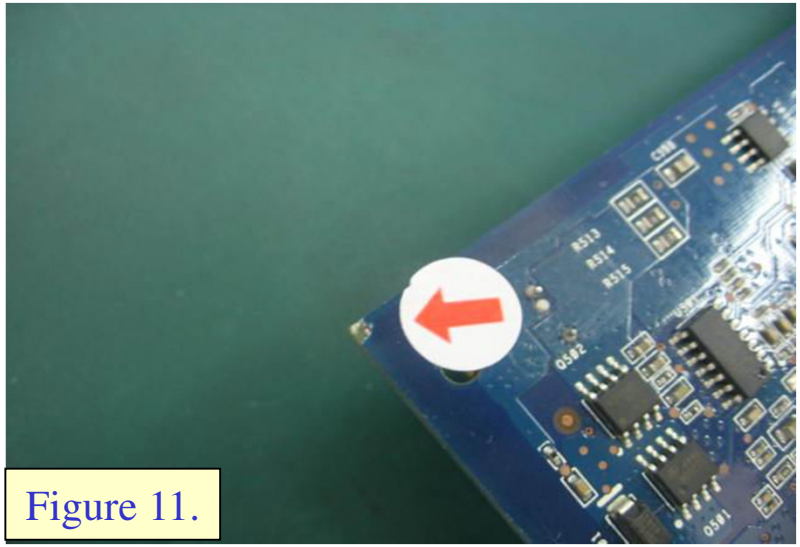


Figure 11.

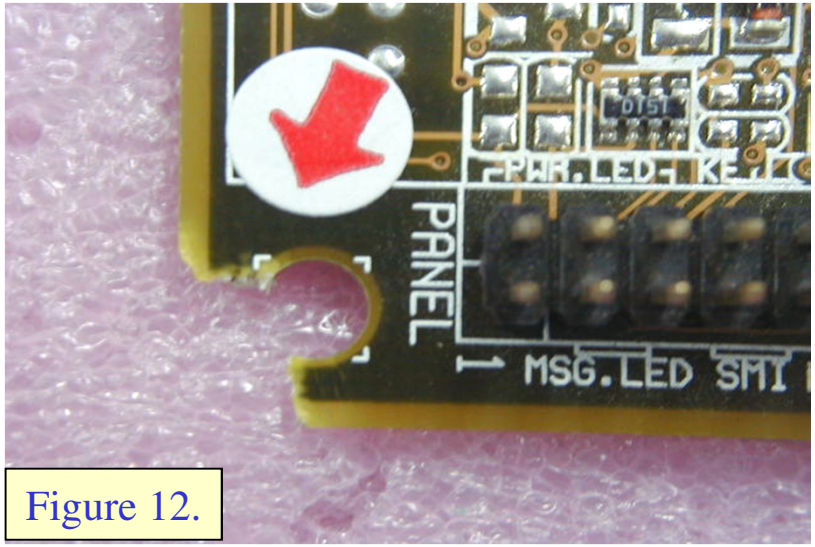


Figure 12.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Broken [Figure 11~12]	Only a bit broken in the edge of PCB and will repair after informing Customer	Accepted	-	-	-
PCB Broken [Figure 12]	If the bottom side has circuit trace	Rejected	-	-	-

3-1 Damaged capacitors, resistors, inductors, small passive components, etc.

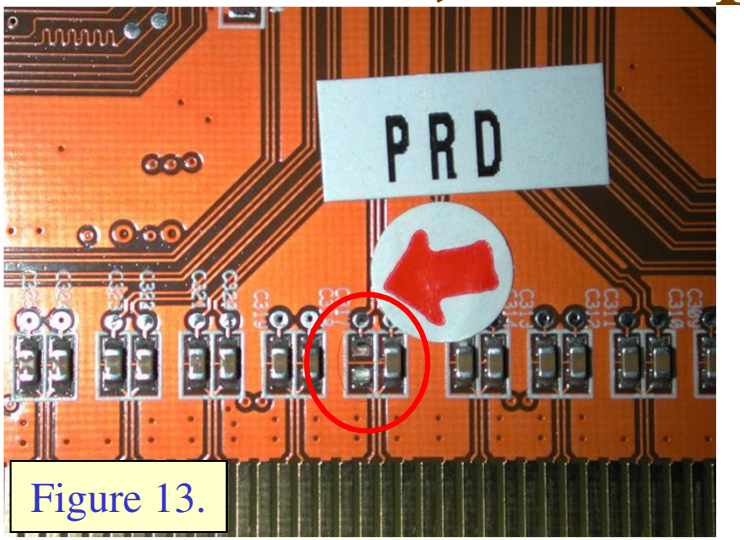


Figure 13.

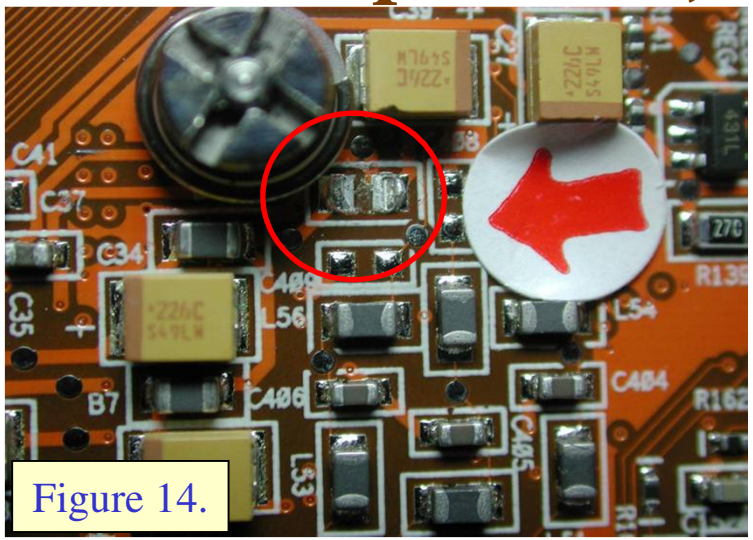


Figure 14.

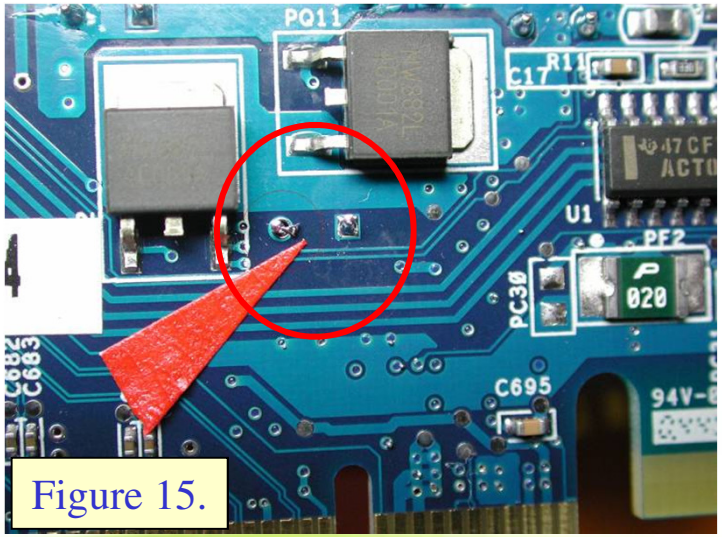


Figure 15.

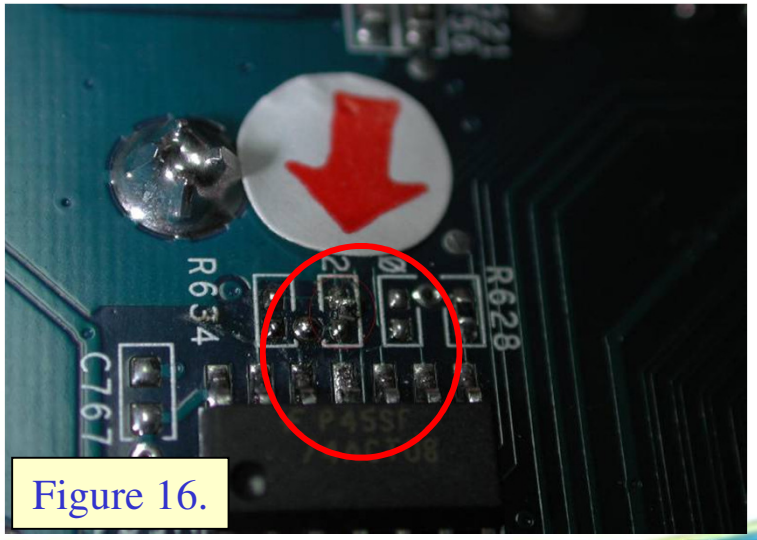


Figure 16.

3-2 Damaged capacitors, resistors, inductors, small passive components, etc.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
Damaged Component [Figure 13~16]	If only few impacted broken components slightly and PCB is ok without any broken	Accepted	-	Charge	Charge
	If it's serious impacted or PCB broken more than 3 lines	Rejected	-	-	-

4-1 PCB & Component Oxidation

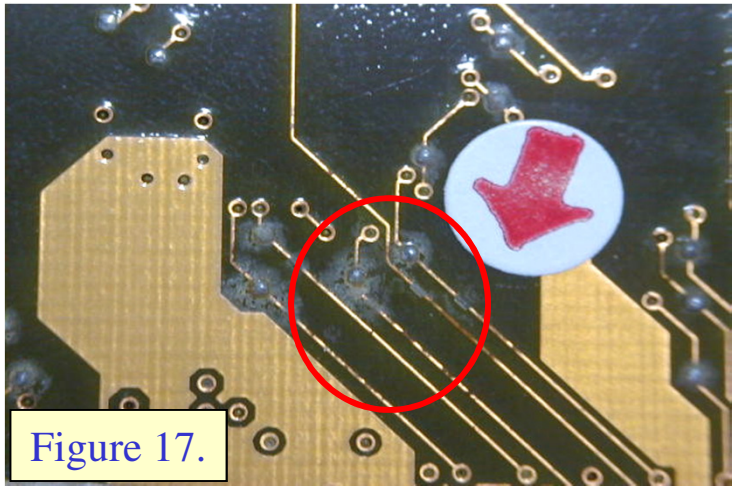


Figure 17.

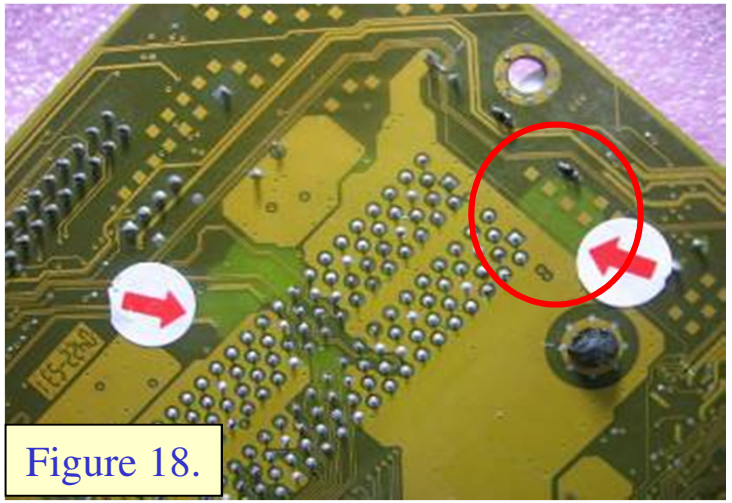


Figure 18.

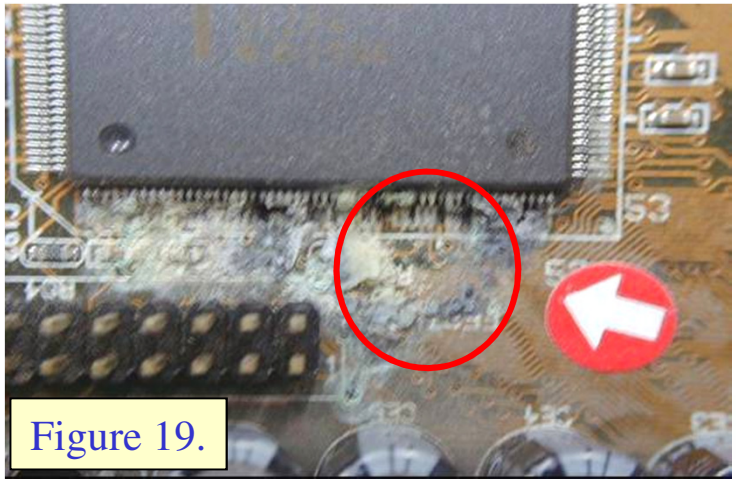


Figure 19.

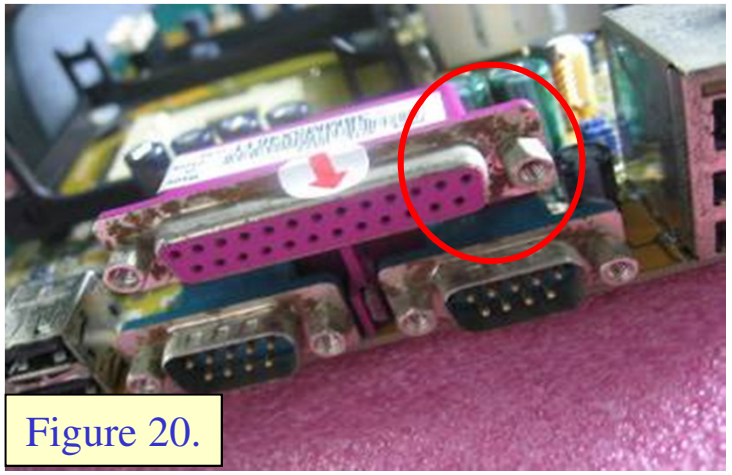


Figure 20.

4-2 PCB & Component Oxidation

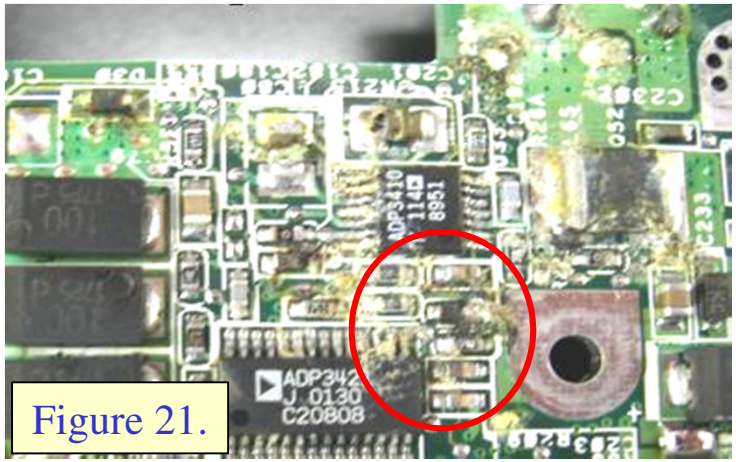


Figure 21.

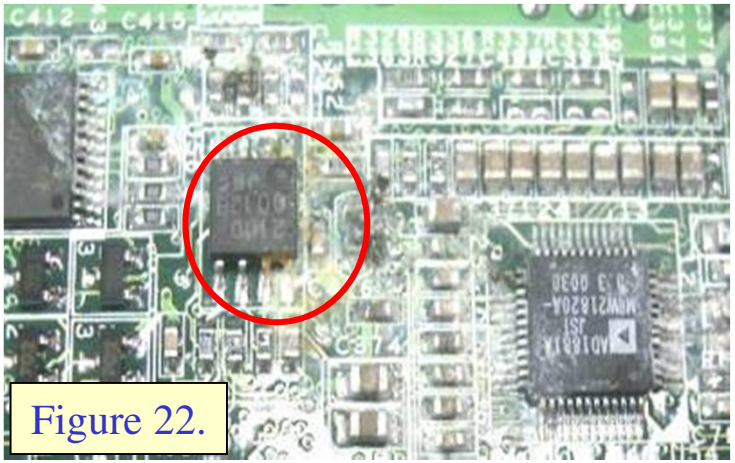


Figure 22.

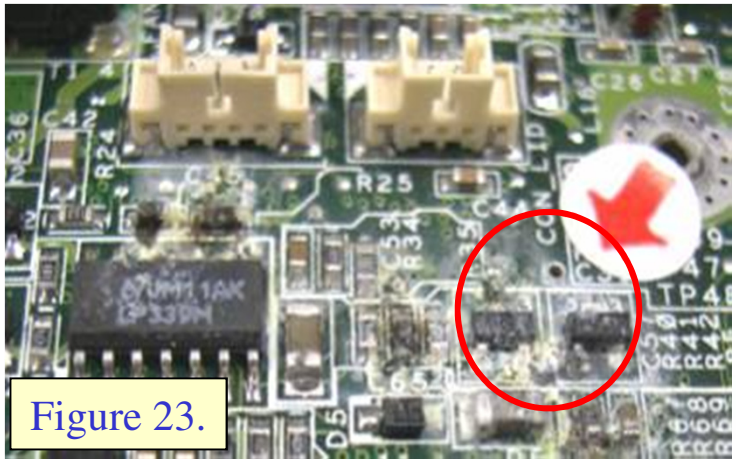


Figure 23.

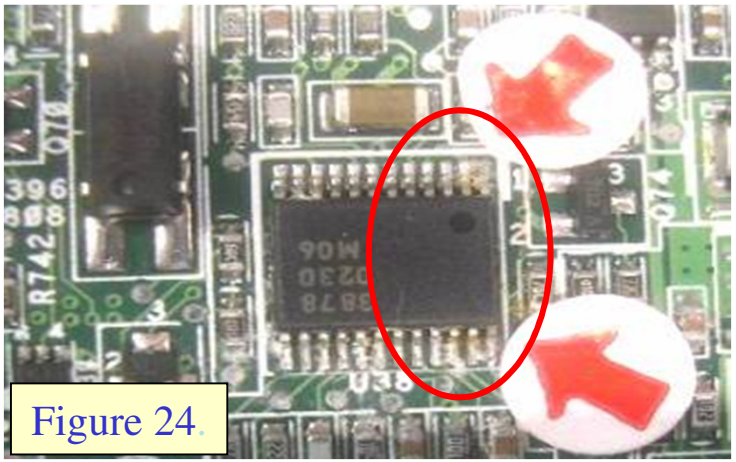


Figure 24.

4-3 PCB & Component Oxidation

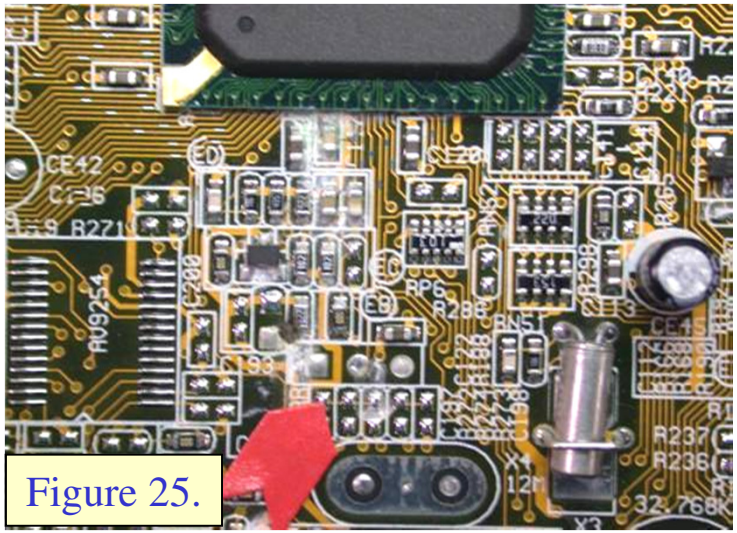


Figure 25.

Figure 26.

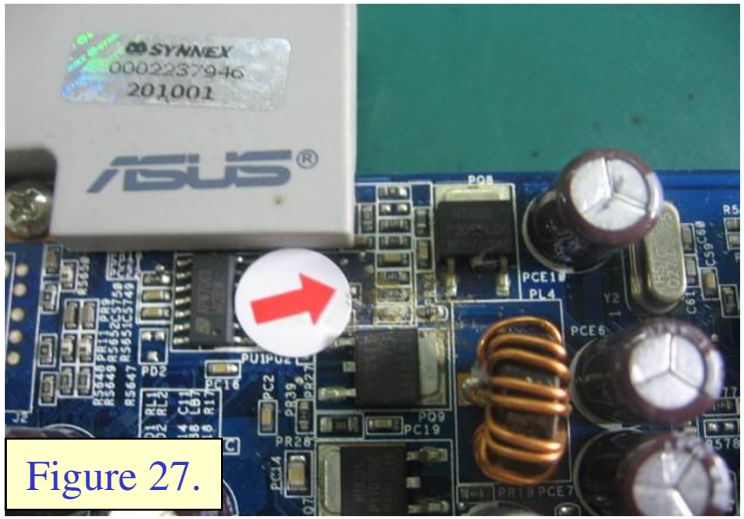


Figure 27.

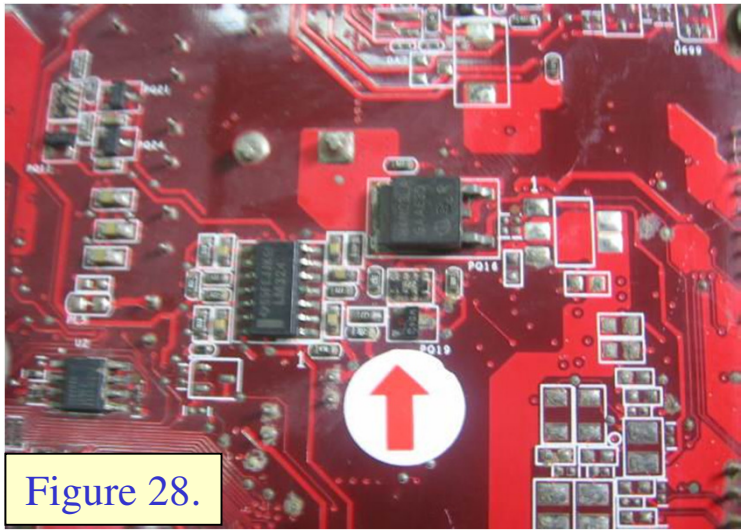


Figure 28.

4-4 PCB & Component Oxidation

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Oxidation [Figure 17~23]	If the PCB is verified as user's faulty. e.g. a. Customer repaired by themselves and use wrong way to clear to get the oxygenation. b. splash by water.	Rejected	-	-	-
	If it's verified as ASUS's faulty	-	Accepted	Free	Charge
Component Oxidation [Figure 24~28]	If only component oxidation and PCB is ok without any oxidation and verified as user's faulty.	Accepted	-	Charge	Charge
	If only component oxidation and PCB is ok without any oxidation and verified as ASUS's faulty.	Accepted	-	Free	Charge

5-1 PCB Burned

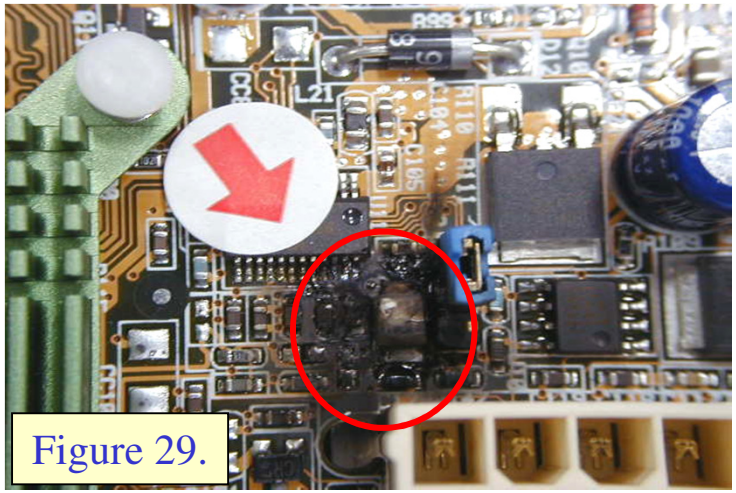


Figure 29.

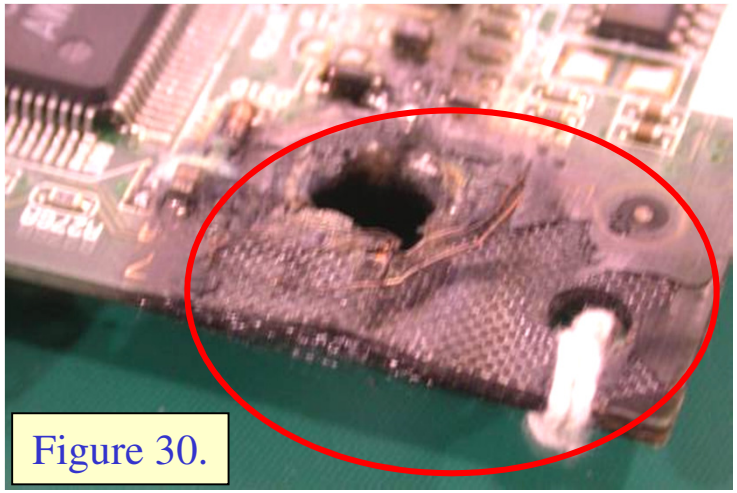


Figure 30.

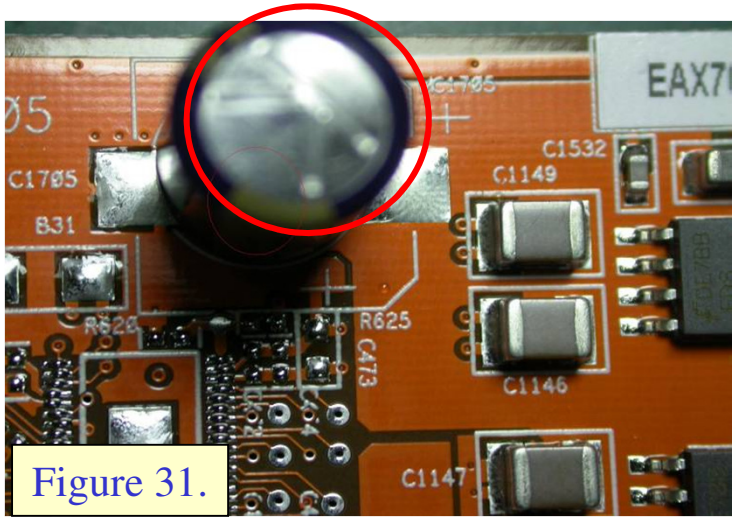


Figure 31.

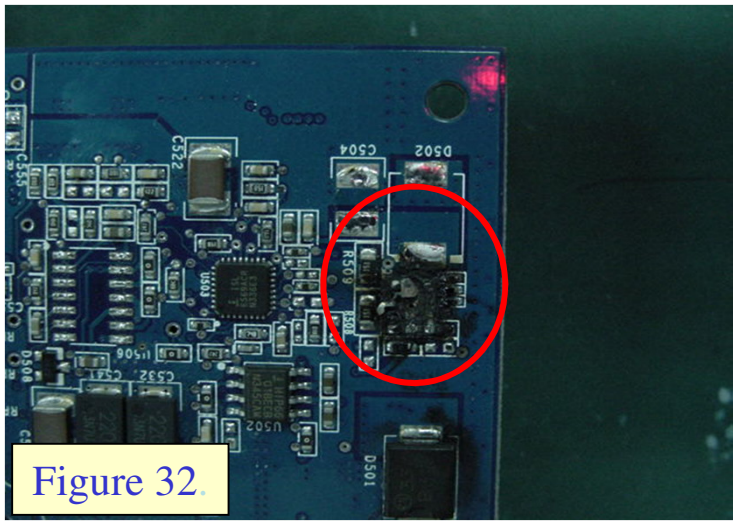


Figure 32.

5-2 PCB Burned

Figure 33.

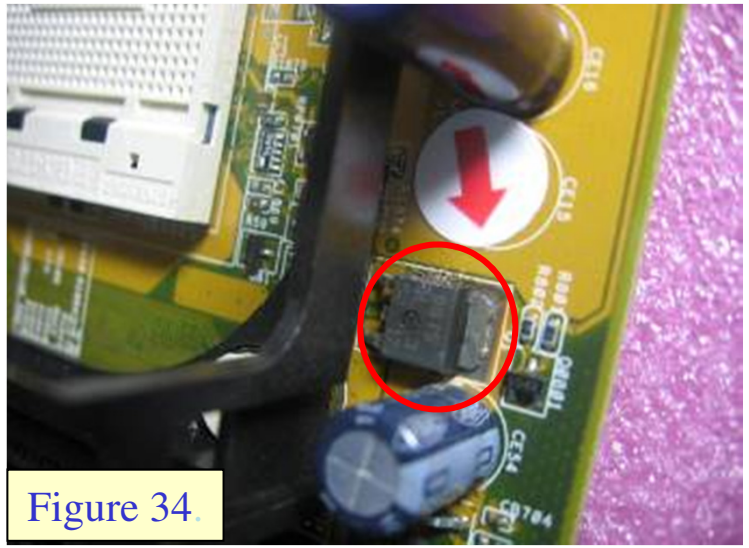


Figure 34.

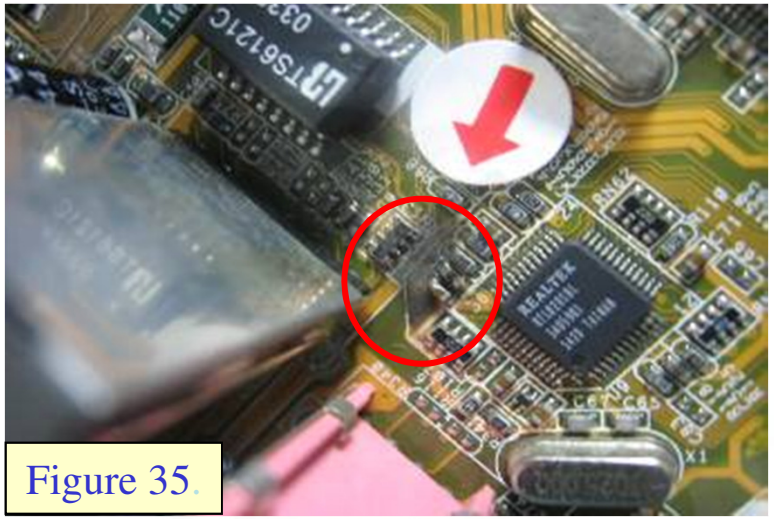


Figure 35.

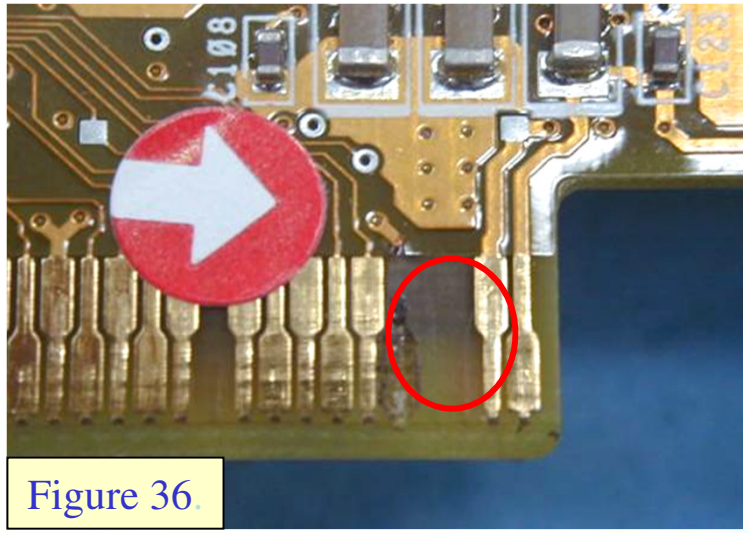


Figure 36.

5-3 PCB Burned

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
PCB Burned [Figure 29~35]	If VGA PCB is burned. Non-CID	-	Accepted	Free	Charge
	If the PCB is burned as user's faulty. e.g. a. Customer repaired by themselves. b. splash by water.	-	Accepted	Charge	Charge
PCB Burned [Figure 36]	If gold finger of the card is burned. e.g. Customer wrong to plug in the video card.	Rejected	-	-	-

6-1 Component Burned

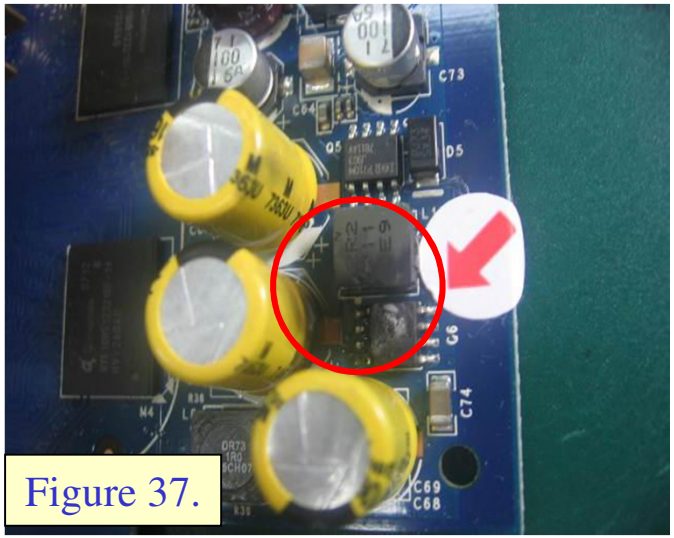


Figure 37.

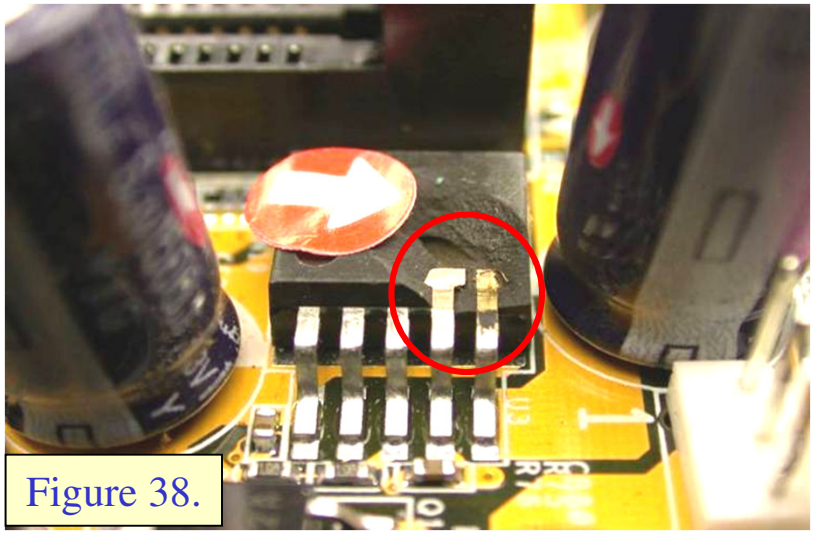


Figure 38.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
Component Burned [Figure 37~38]	For general	Accepted	-	Free	Charge
	If it's very obvious as user's faulty	Accepted	-	Charge	Charge

7-1 Missing Component

Figure 39.

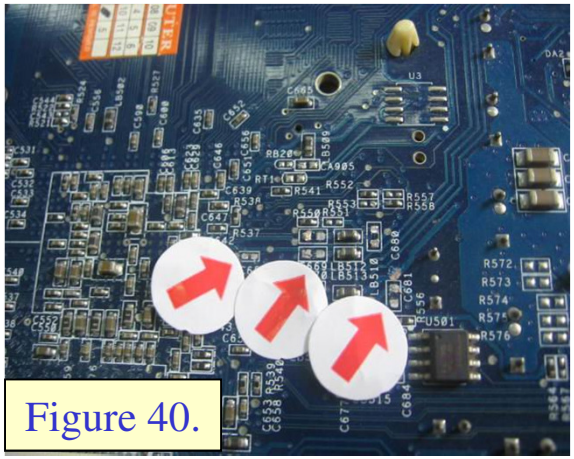


Figure 40.

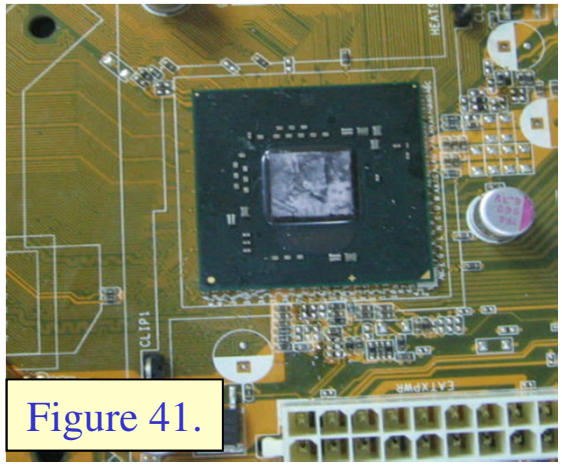


Figure 41.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
Missing Component [Figure 39~40]	For general, if missing less than 3 components by user	Accepted	-	Charge	Charge
Missing Component [Figure 41]	If the heat sink is missing	Accepted	-	Charge	Charge

7-2 Missing Component

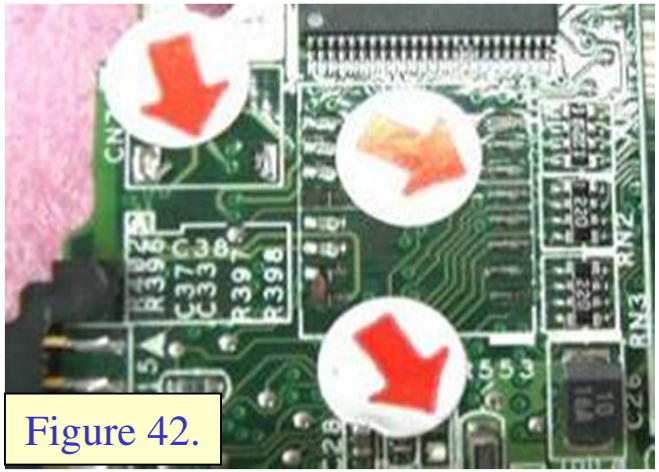


Figure 42.

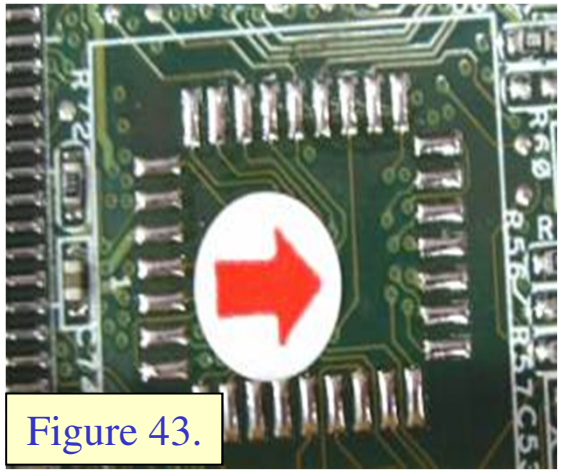


Figure 43.

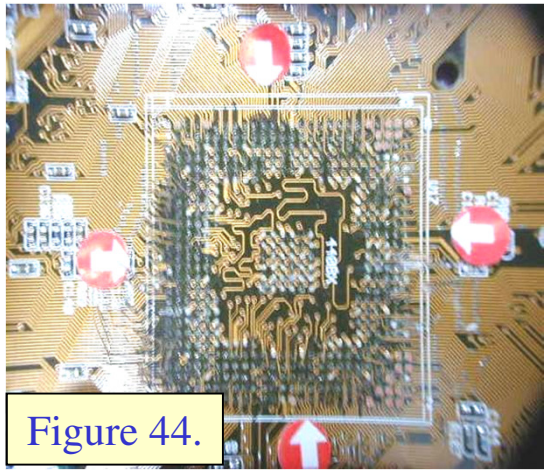


Figure 44.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
Missing Component [Figure 42]	If the PCB or PAD is destroyed by user	Rejected	-	-	-
Missing Component [Figure 43~44]	If IC or BGA missing	Rejected	-	-	-

8-1 Dirt

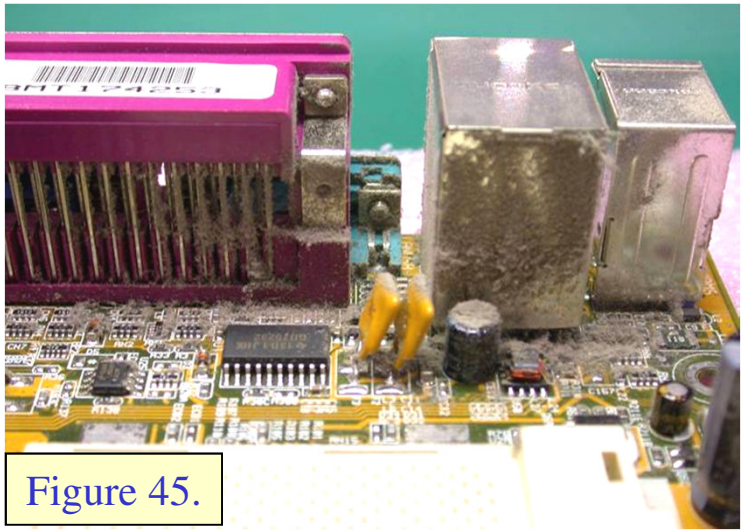


Figure 45.

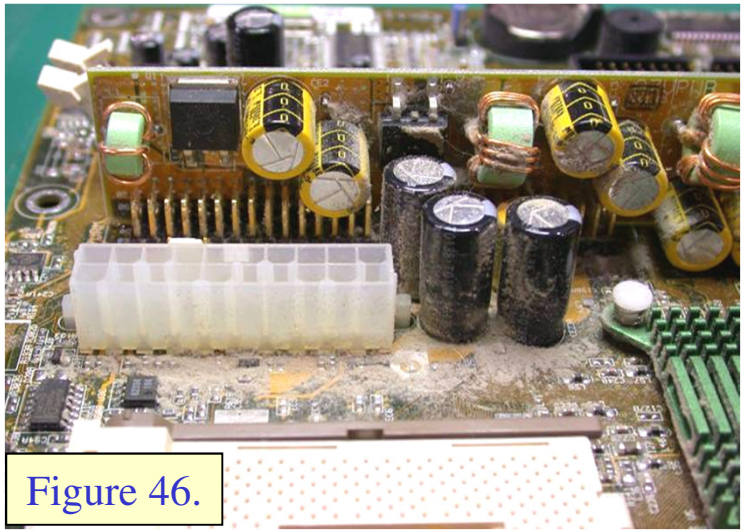


Figure 46.

Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
Dirt [Figure 45~46]	For general, if the board is dirt and doesn't influence function. We will clean it.	Accepted	-	-	-

9-1 S/N Label Damaged

Figure 47.

Figure 48 .

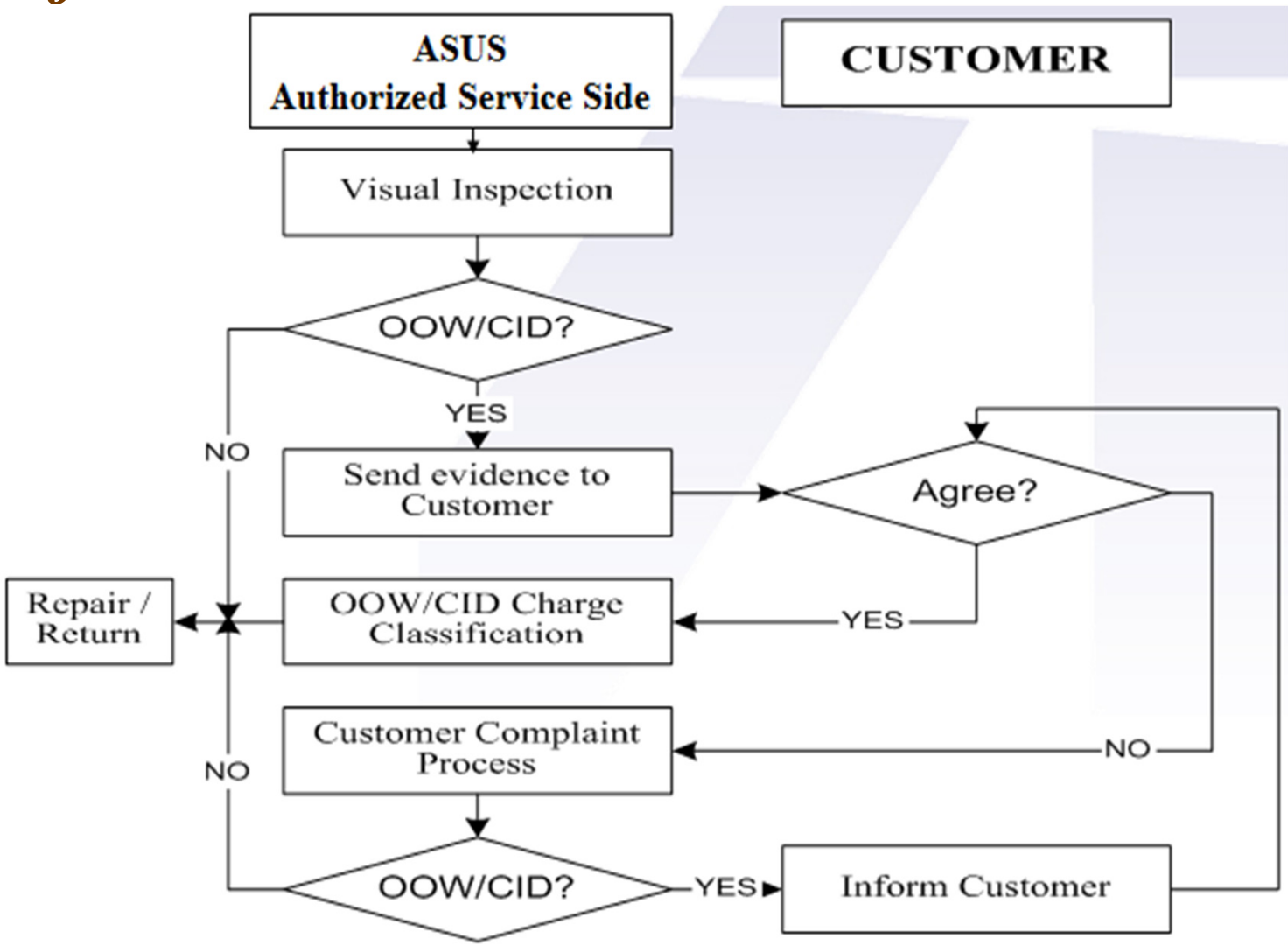
Figure 49.

Figure 50.

9-2 S/N Label Damaged

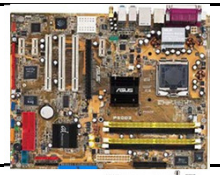
Damage	Comments	Repair	Exchange	In-Warranty	Out-Warranty
S/N Damaged [Figure 47]	No S/N or the S/N can't be seen clearly whether it's in warranty or not.	Rejected	-	-	-
S/N Damaged [Figure 48~50]	S/N was damaged, but it can be recognized in warranty. If can't be repaired, it would be returned to customer.	Accepted	-	free	-

10-1 CID & O.O.W. service process flow chart

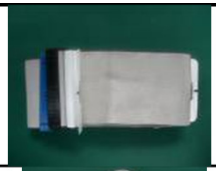


Chapter 3
ASUS Pretest Fixture Package Contents

ASUS Pretest Fixture Package

NO#	Equipment Description	ASUS Part#	Supplier	Quantity	Remarks
1	P5GD2 Deluxe MB	80- MBL5-*		1	
2	P5E MB (For C1CKJ0-B14 and after)	80-MBB7X0-*		1	
3	INTEL 775 CPU			1	
4	Heat sink + FAN	22-240000160		1	
5	DDR2(667/800)	9NE /22-T00642404		2	
6	TEST HDD			1	

ASUS Pretest Fixture Package

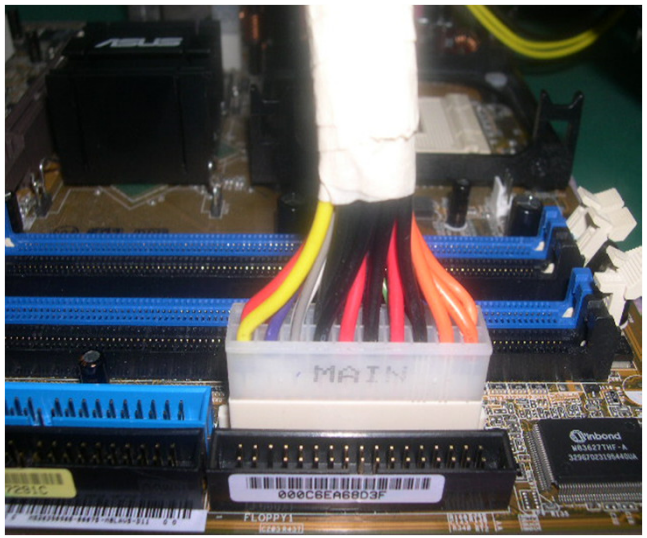
7	40Pins IDE Cable ATA66		ASUS	1	
8	PS/2 MOUSE			1	
9	PS/2 KEYBOARD			1	
10	ATX POWER SUPPLY			1	
11	CRT monitor (D-sub out)			1	
12	SONY TV PVM-1354Q (S-Video out)	20-521029000		1	
13	LCD monitor (DVI out)			1	

ASUS Pretest Fixture Package

14	LCD “Y” Cable	14-010230000		1	
15	Y TV cable	16-T104B0999		1	
16	Power Cable	000602510		1	
17	S CABLE	16-300018821		1	
18	VGA extend cable	16-300001230		1	
19	LCD extend cable	16-T10540823		1	
20	PCIEX16 VGA CARD			1	

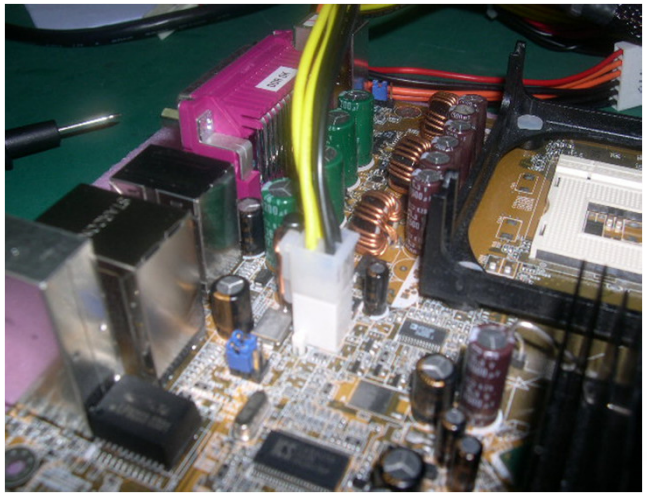
Chapter 4
Pretest Operate Description

Pretest operate description-1



- Inserted 400W ATX power connector

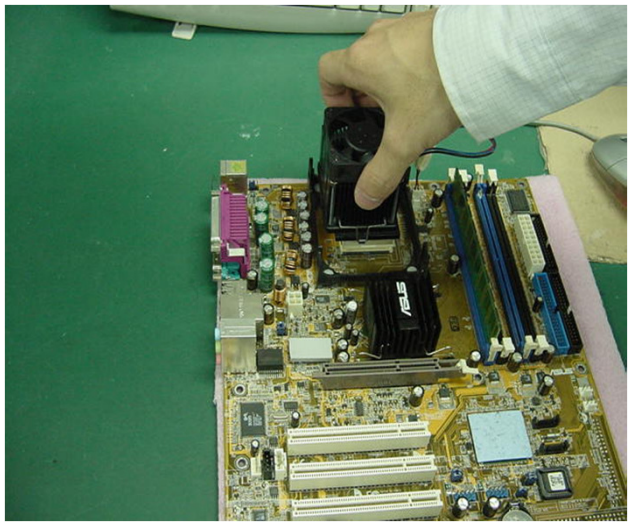
1



- Inserted 4PIN12V power

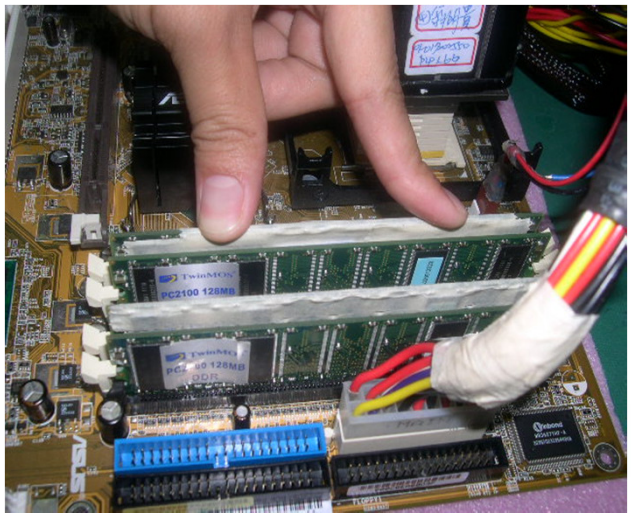
2

Pretest operate description-2



- Inserted CPU

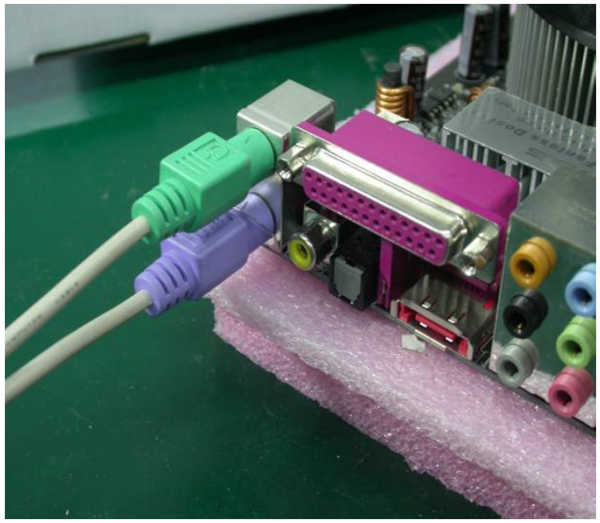
3



- Plug in DDR/256M(266MHz) or DDR/256MB(400MHZ) x 2 to DIMM_A1 & DIMM_B1

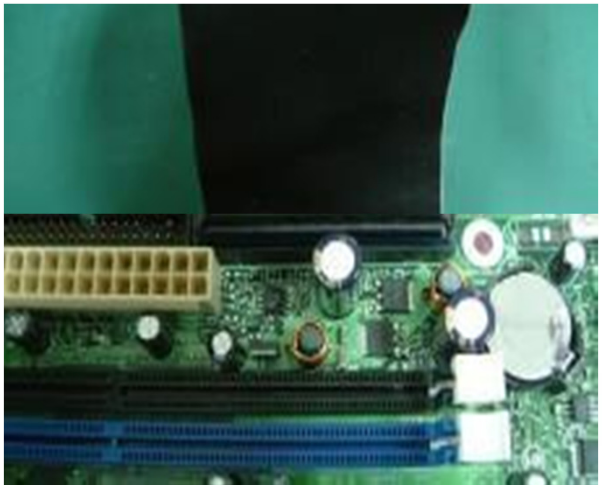
4

Pretest operate description-3



5

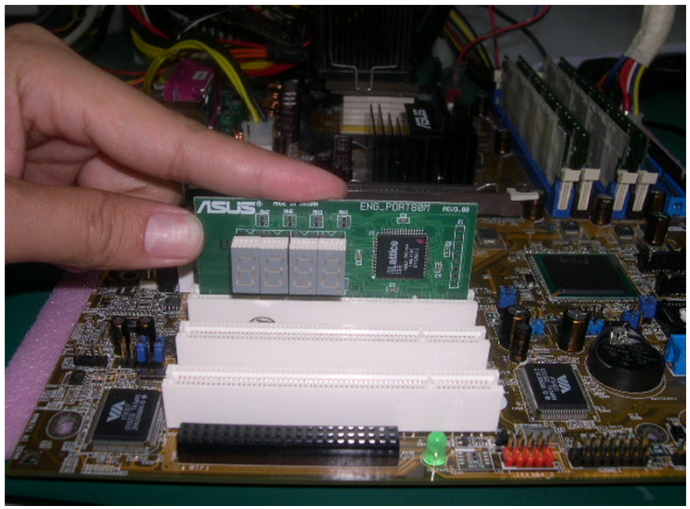
- Plug keyboard & mouse into PS2KBMS



6

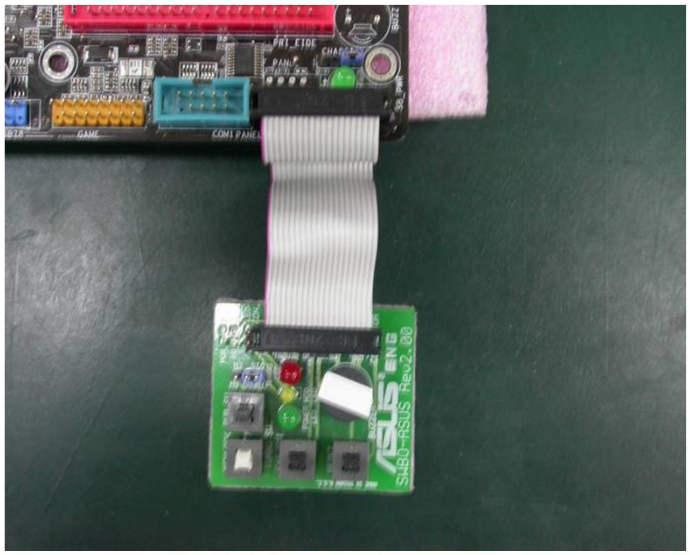
- Install test HDD into PRI_IDE

Pretest operate description-4



- Plug PORT80 card into PCI slot.

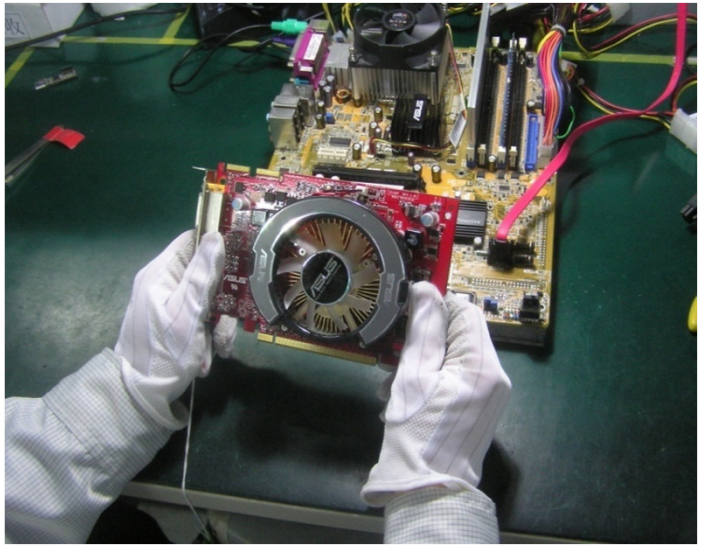
7



- Plug control panel TO panel Jumper.

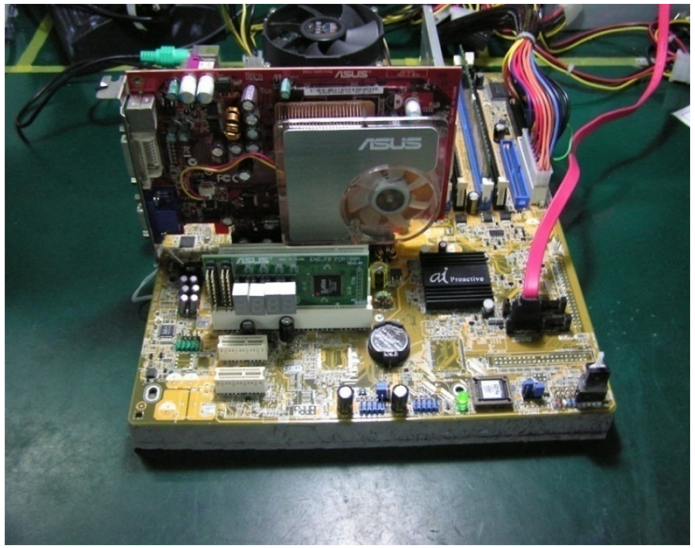
8

Pretest operate description-5



- Visual inspection:
- Check whether there is a part that is damaged

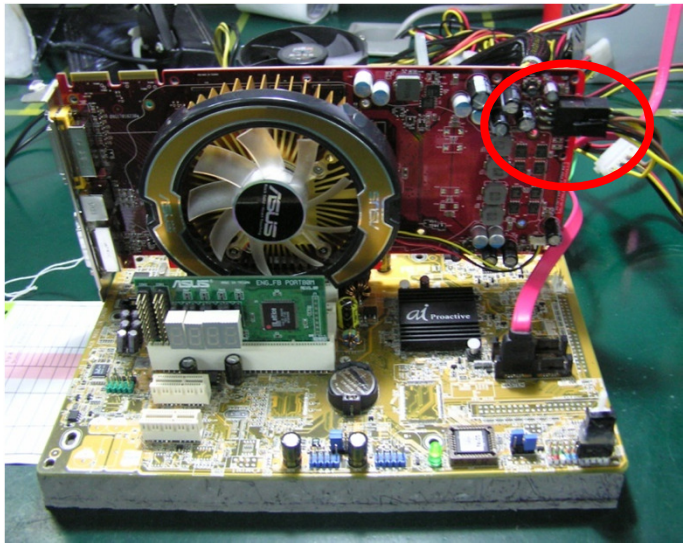
9



- Plug VGA card to PCIE slot

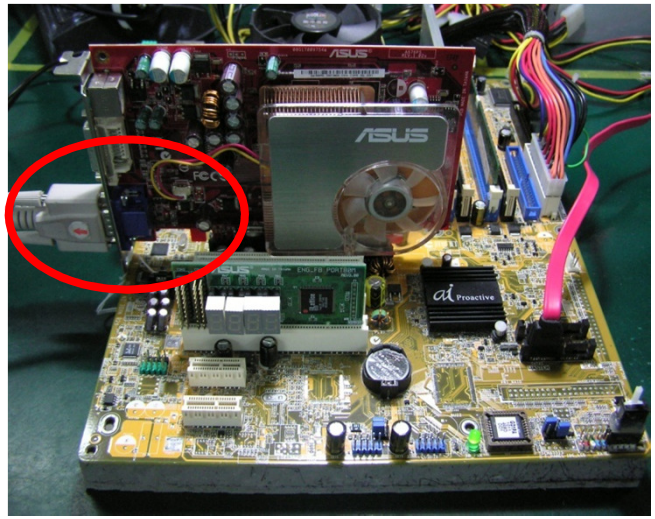
10

Pretest operate description-6



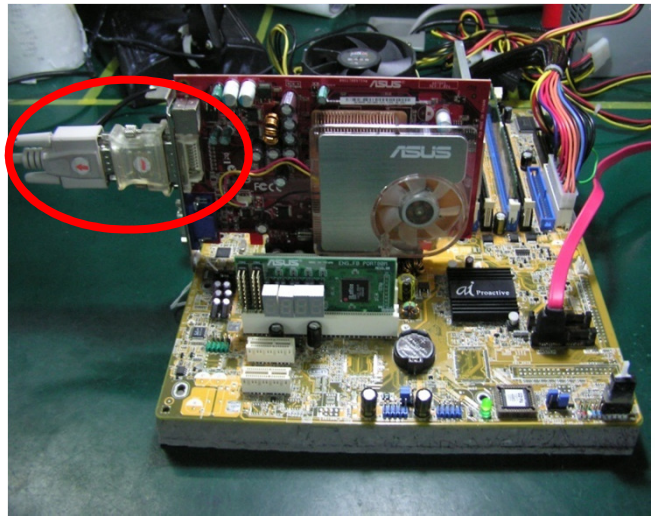
- For some top-end cards, we should plug another power point.

Pretest operate description-7



- Plug CRT cable to comport-2. connect CRT cable to VGA comport-1 (blue).

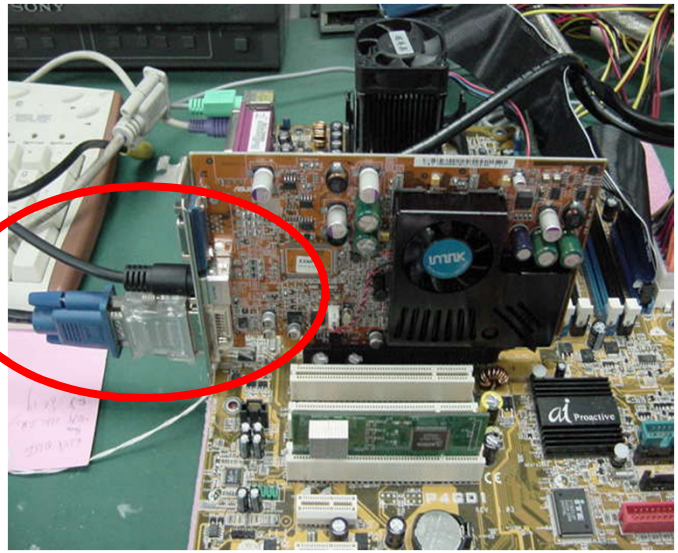
11



- Plug LCD-DVI cable to DVI comport on DVI-Y cable (white), then plug to J4 comport.

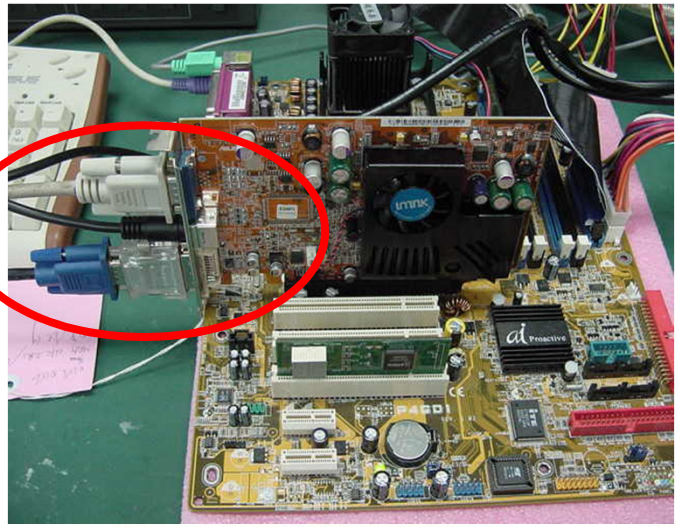
12

Pretest operate description-8



- Plug VIVO cable to J3 comport

13



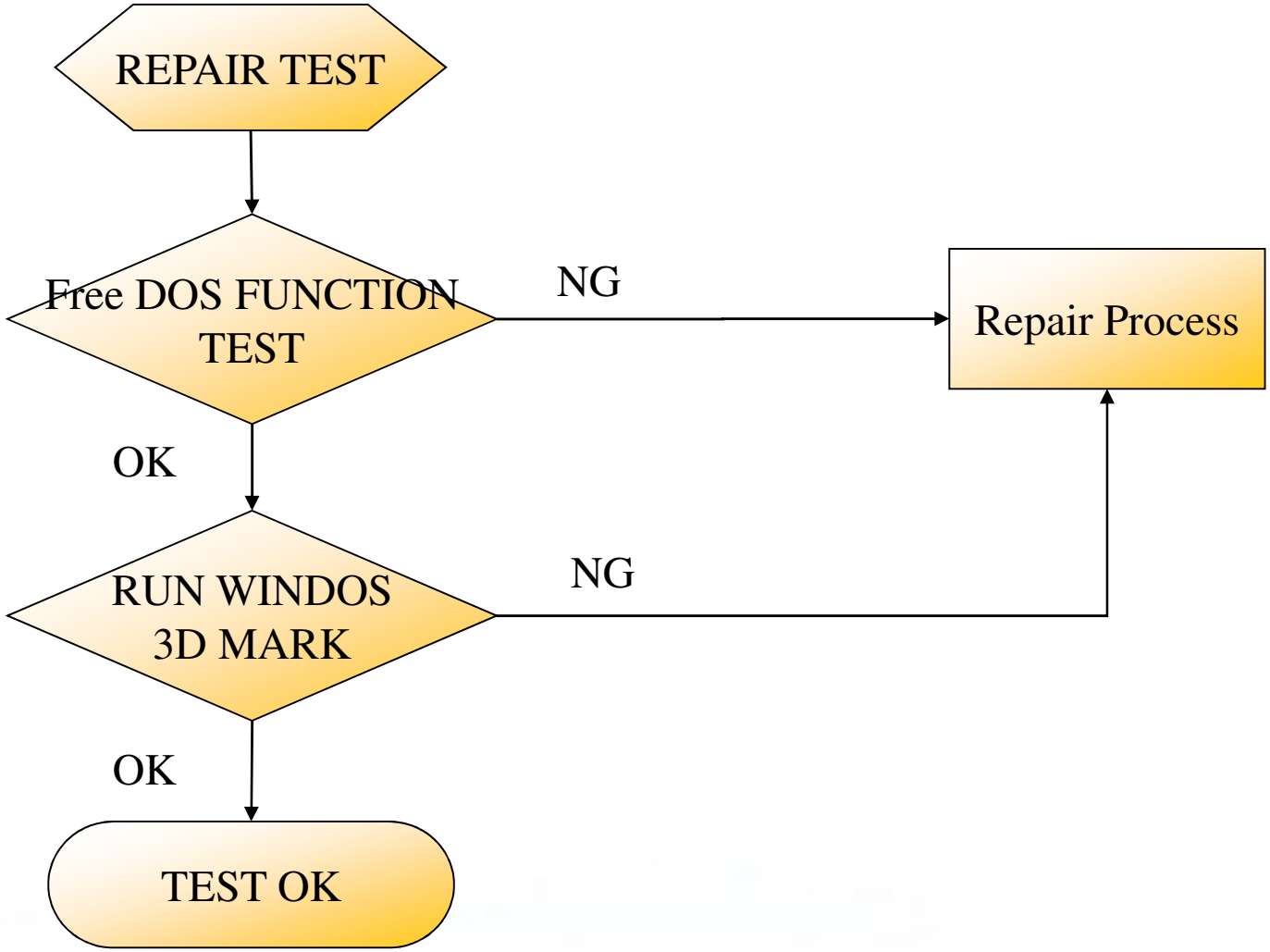
- Completion
- If VGA card has fan, make sure the fan can work correctly after booting up.

14

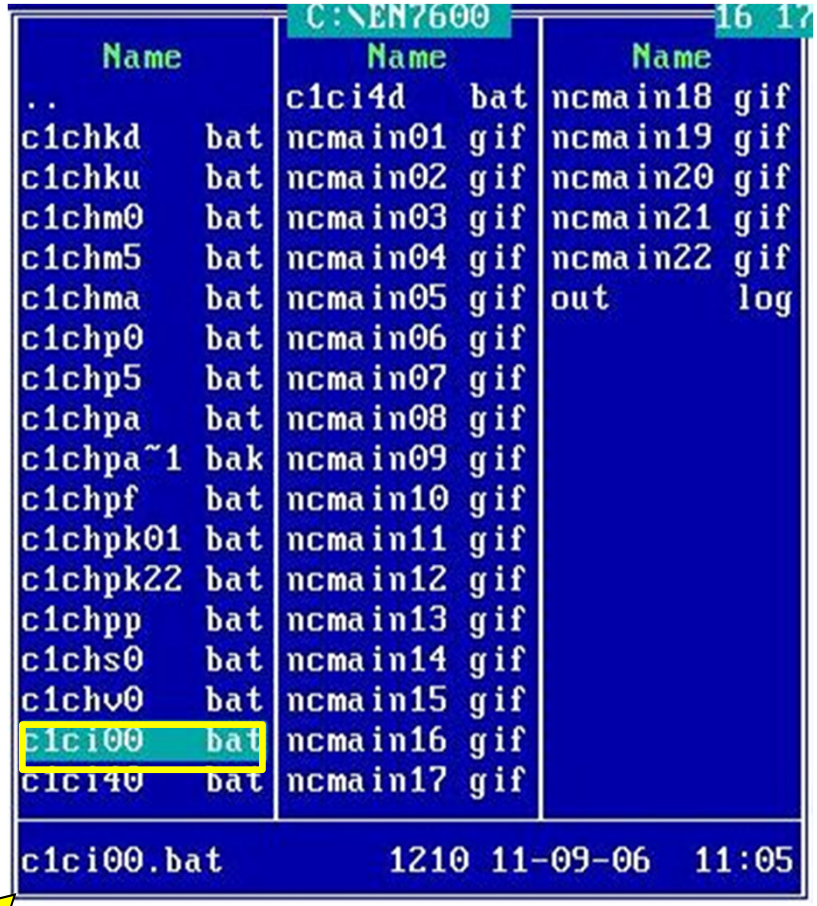
Chapter 5
Test program description

A. Free DOS Test
B. Windows 3Dmark Test
C. Windows FurMark Test

VGA Test Flow Chart



Free DOS Test program description



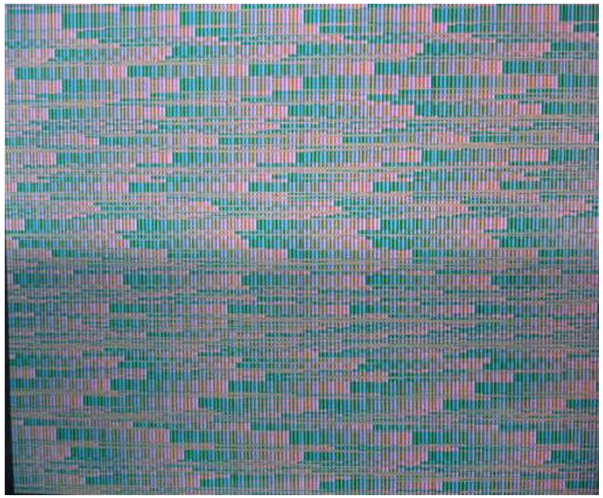
1

- Choose model then entrance

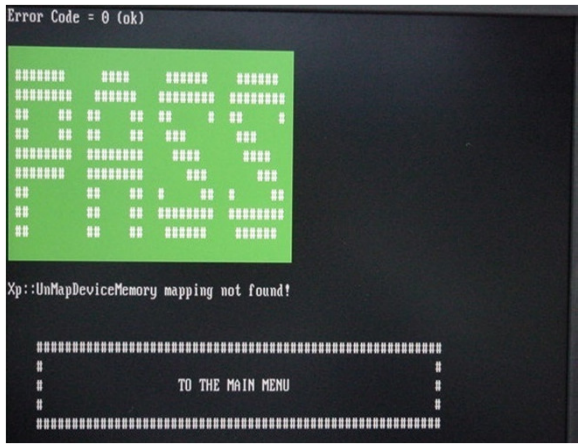
2

- Choose part number then entrance

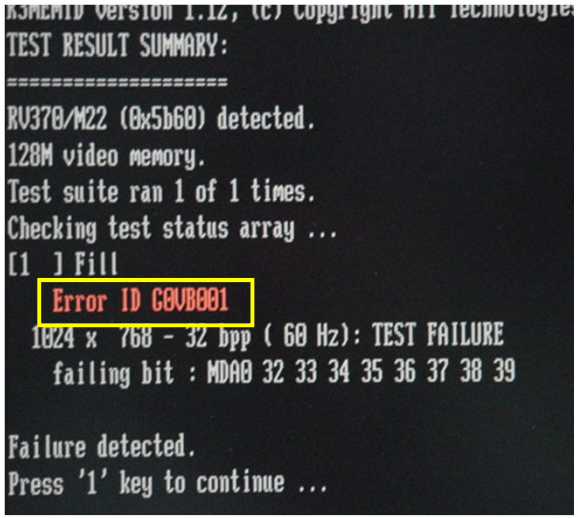
Free DOS Test program description



Free DOS Test program description



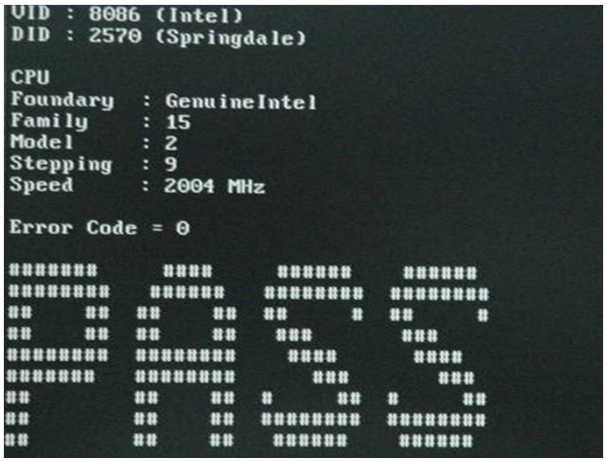
- When the test pass, we can see the picture like the above one.



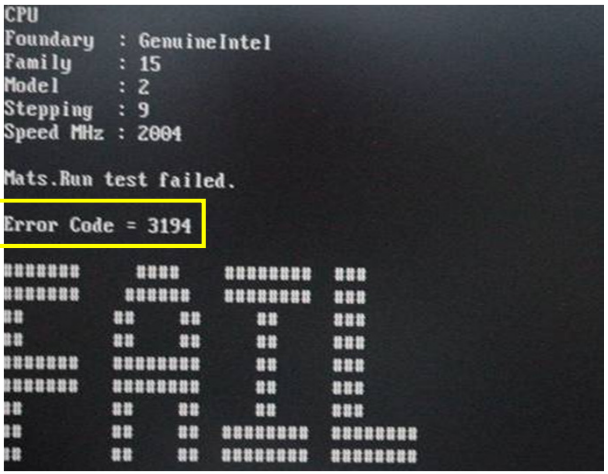
- When the test failed , we can see the picture like the below one.

- AMD - Error ID “G0VB001”

Free DOS Test program description



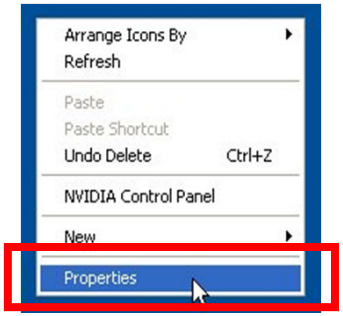
- When the test pass, we can see the picture like the above one.



- When the test failed , we can see the picture like the below one.

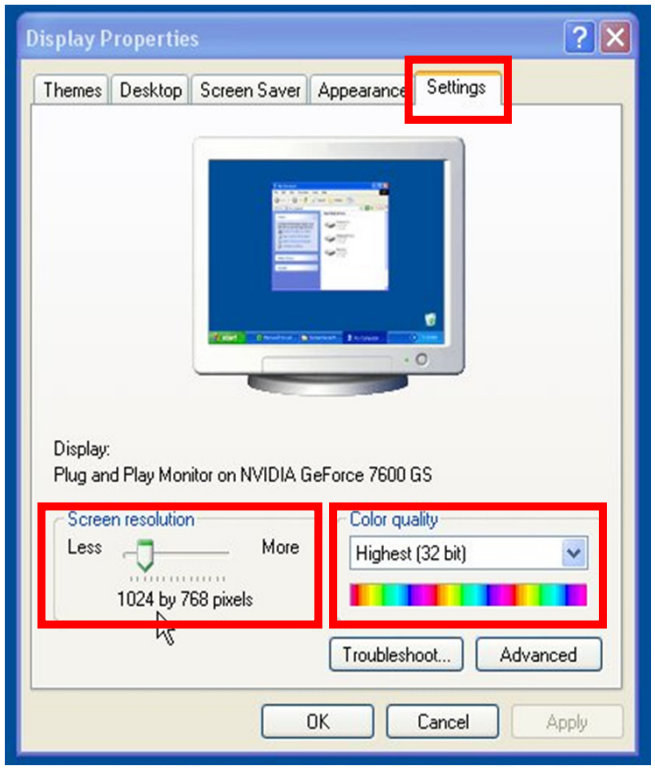
- NVIDIA - Error ID “3194”

Windows 3Dmark Test program description



- Click the right key of the mouse, choose “properties”

1



- Choose “settings” to set

screen resolution 1024 by768 pixels

color quality to Highest (32 bit)

2

Windows 3Dmark Test program description

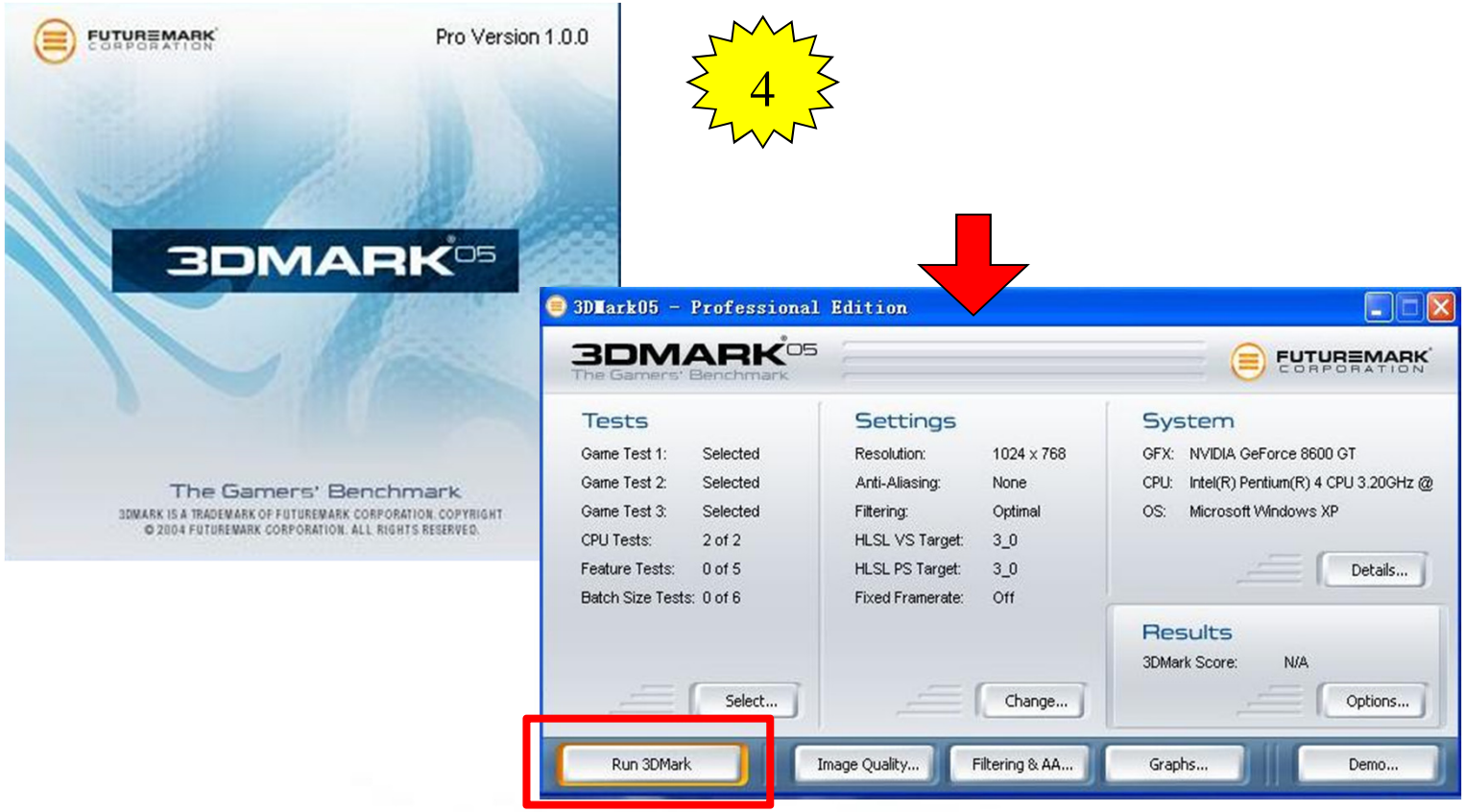
3

- Double-Click “3DMark*” on desktop

Note:
Strict extent required to card:
3DMark Vantage>>3DMark 06>> 3DMark 05>>
3DMark 03.
For few low stage card, choose 3DMark03
3DMark Vantage is the latest product for top card
Here, we take 3DMark05 for an example.

Windows 3Dmark Test program description

- Click “Run 3DMark”

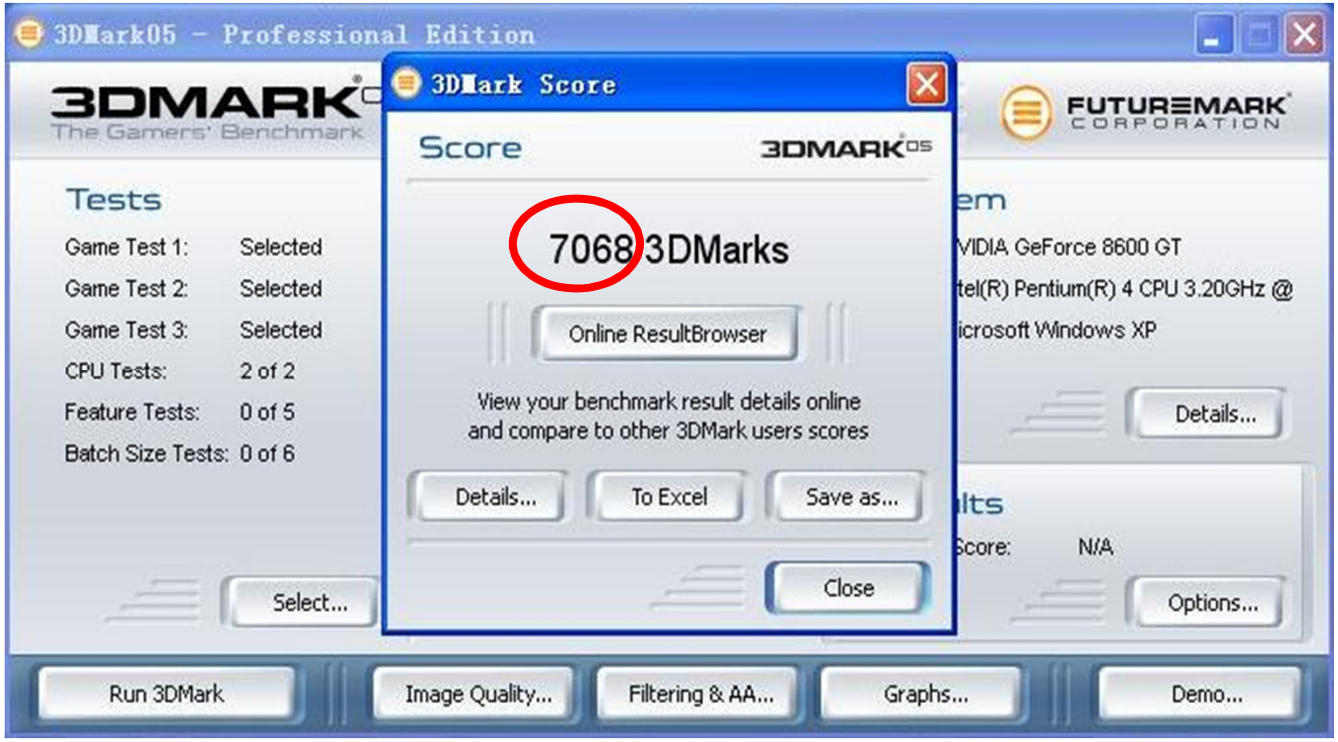


Windows 3Dmark Test program description

5

- Test on going

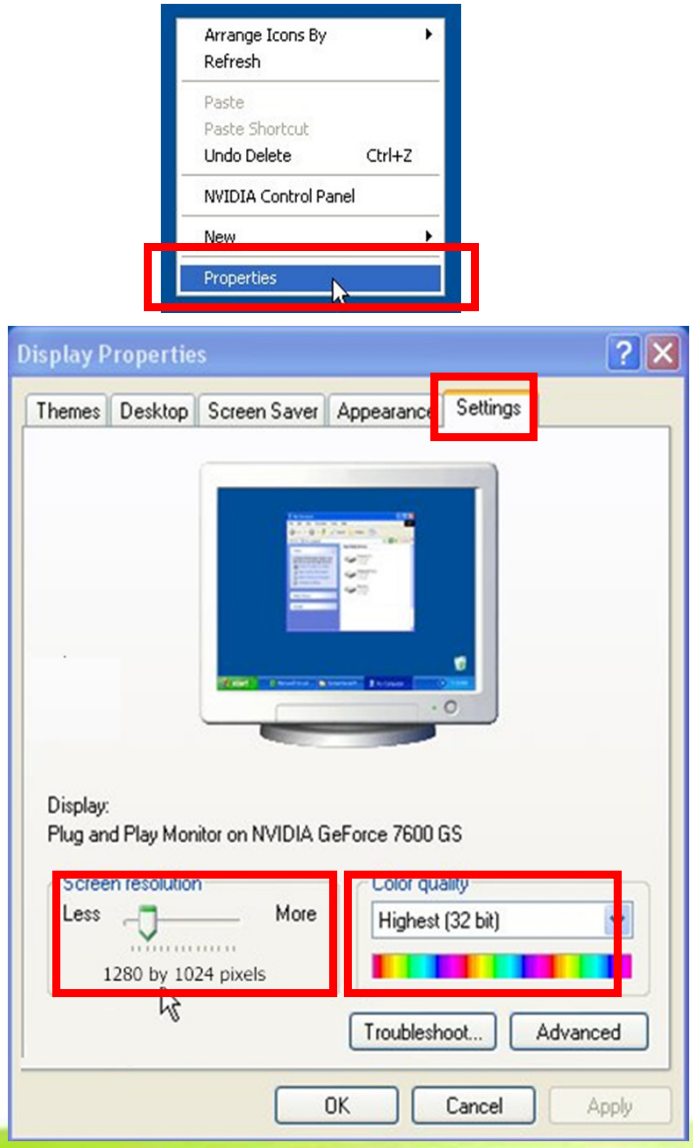
Windows 3Dmark Test program description



6

- Test goes to end with result score shown on screen

Windows FurMark Test program description



- Click the right key of the mouse, choose “properties”

1

- Choose “settings” to set

screen resolution 1280 by 1024 pixels

color quality to Highest (32 bit)

2

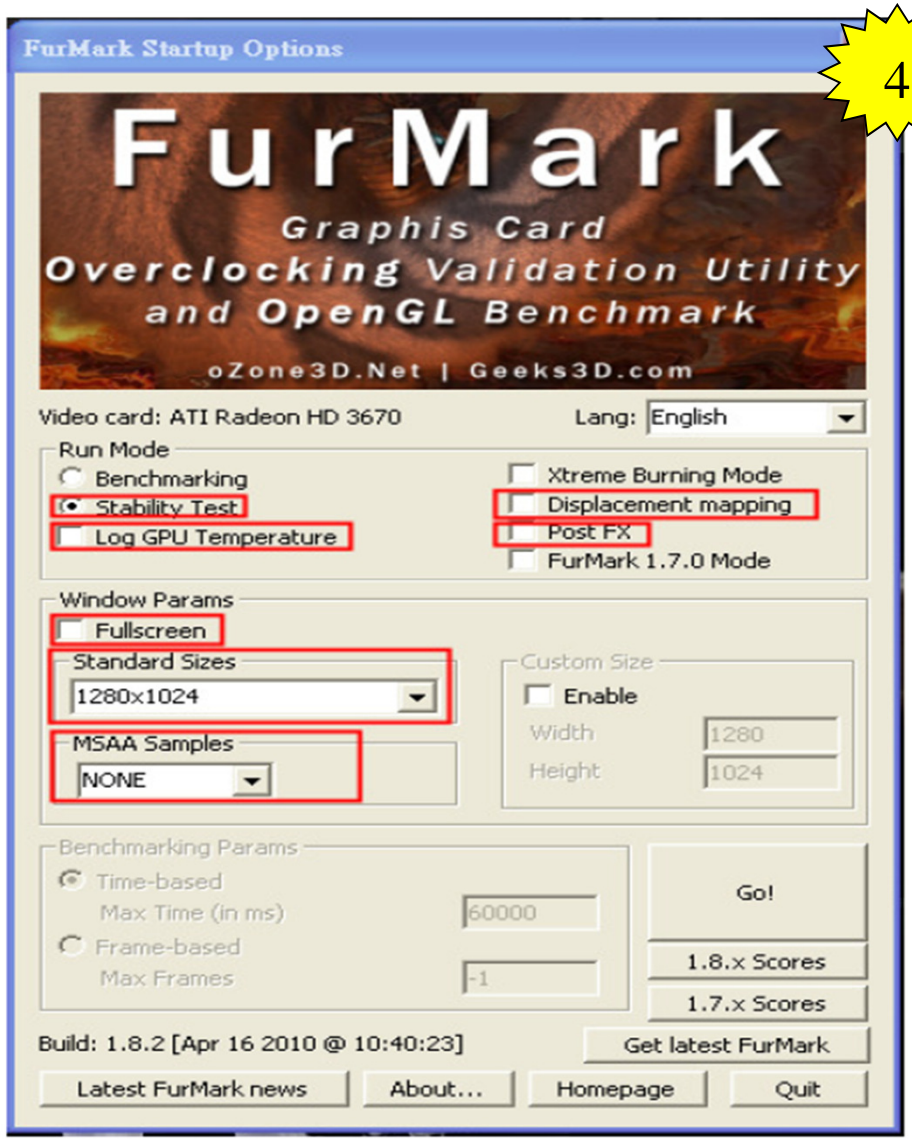
Windows FurMark Test program description

3

- Double-Click "FurMark" on desktop

Note:
Please use the FurMark for NTF return card and do not over 20 mins.

Windows FurMark Test program description



4

Launch FurMark(there are two icons on desktop(Furmark and Furmark(multi-GPU)),the two-card platform select the latter icon).

"Run mode" select "Stability Test" & "Log GPU Temperature".

"Windows Params" select "Fullscreen", "Stand Sizes" select "1280*1024".

Top graphics(multi-GPU),
please select 1920*1200,
set MSAA 8x,
select Displacement mapping & Post FX.

- Click "Go!"

Windows FurMark Test program description

5

Please check the display(about test 20 minutes), if there is no image lost that means test is OK.

(Test fail: flickering, discolor, crash, no display and so on)

NOTICE

1. To avoid damage device or M/B, Please press PWR_SW key-stoke on Switch Board -for discharge after turn off main power .
2. While unplugging card, make it in upright direction to golden finger .
3. If there is any fail message showing on screen, please pass to another station do retest, if the result also is fail in the same problem or other problem, it can be determined to NG. But if the result is PASS that can be determined to PASS.
4. If it happens in same as serial problem over 3p.c.s, please inform test supervisor.
5. According to ATX power specification, the +5V standby voltage exists while AC110V is connected, for safe reason, turn off main power when test is idling or during break time.
6. When change Card for test, make sure that power is OFF!!
7. When testing TV, must check whether the monitor has noise or flash, and whether color is correct.

Q&A

The End!
Thank you!